

*The*  
**AMERICAN  
RIFLEMAN**



Published By  
The National Rifle Association of America  
Incorporated 1871

25 CENTS

# TWO NEW MEMBERS OF THE "BELTED" CLAN



The success of the Non-Disintegrating Expanding bullet—popularly known as the "Belted" bullet—in the .30/40 and .30/06 calibers, created a demand for this type of bullet for other calibers.

After exhaustive proof-tests, the belted bullet is now available in the popular .30/30 and .35 Remington calibers. Laboratory tests on paraffin, laundry soap, pork shoulders and

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## BALLISTICS OF BELTED BULLET

Cartridge	Bullet Weight Grains	Muzzle Velocity Foot Seconds	Muzzle Energy Foot Pounds	Trajectory in inches,			Accuracy Range Yards	Penetra- tion in 1/8" Pine Boards
				100 Yds.	200 Yds.	300 Yds.		
.30/30 W.C.F. ....	180	2100	1760	1.0	4.6	11.2	700	22
.30/40 Krag ....	225	2005	2010	1.18	5.14	12.67	1000	27
.30/06 Springfield ....	225	2400	2880	.83	3.68	9.26	1200	33
.30/03 Springfield ....	225	2210	2440	.96	4.25	10.70	1000	31
.35 Remington ....	210	2065	1987	1.2	5.2	13.2	700	26

# PETERS

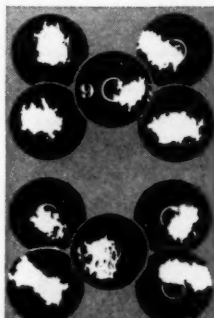




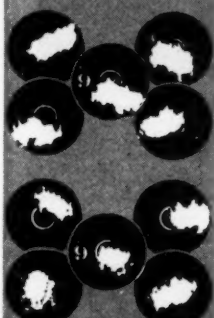
# New UNBEATABLE Team Record with **WINCHESTER** EZXS

TRADE MARK

## OTHER HIGH SCORES IN OHIO TEAM CHAMPIONSHIP MATCHES



V. Z. CANFIELD



D. A. BASHLINE

Targets shot by Canfield and Bashline in the Club Team Match, in which the four members of the winning Zeppelin Rifle Club team each shot a perfect score of 200 x 200.

**A**T Fort Hayes, Columbus, Ohio, April 18-19, the big annual Ohio Team Champion Matches—small bore, indoors, all events 50 feet, sponsored by the Ohio Rifle & Pistol Association under N. R. A. sanction—produced three new match records, one of them unbeatable, by teams using exclusively Winchester Precision EZXS Ammunition.

### PERFECT SCORE IN CLUB TEAM MATCH—METALLIC SIGHTS—PRONE

First—Zeppelin Rifle Club Team, of Akron (photo above), score 800 x 800—a new match record, which can never be beaten. This club won the same match last year.

V. Z. Canfield . . .	200 x 200
D. A. Bashline . . .	200 x 200
L. C. Barrett . . .	200 x 200
M. Israelson . . .	200 x 200

All shot Winchester Precision EZXS

### NEW RECORD IN LEAGUE CHAMPIONS MATCH—ANY SIGHTS—PRONE, KNEELING, STANDING

First—Zeppelin Rifle Club Team, score 1435 x 1500—another new match record, earning both the Governor's Trophy and the Northeastern Ohio Trophy.

M. A. Klotz . . .	290 x 300
M. Israelson . . .	290 x 300
L. C. Barrett . . .	287 x 300
V. Z. Canfield . . .	284 x 300
D. A. Bashline . . .	284 x 300

All shot EZXS

### GREAT SHOOTING BY KLOTZ

Milton Klotz, of Akron, who shot a 290 x 300 for the Zeppelin team winning the League Champions Match—any sights—listed above, scored a remarkable record in the Summit County (Ohio) Rifle League's series of 19 matches. His aggregate, possibly never before equalled, 5442 x 5700, figured an average of 286.4. Prone score 1894, Kneeling 1828, Offhand 1720 (average 90.5). The same shooter also won the Ohio State Offhand Match at Fort Hayes on February 23rd, with a new record of 191 x 200. His ammunition in all occasions, Winchester EZXS, his rifle a heavy barrel Winchester Model 52.



MILTON KLOTZ

### OHIO TEAM CHAMPIONSHIP MATCH—ANY SIGHTS—PRONE, KNEELING, STANDING

Second—Zeppelin Rifle Club Team No. 1, score 1134 x 1200.

M. Israelson . . .	288 x 300
V. Z. Canfield . . .	285 x 300
M. A. Klotz . . .	286 x 300
Dan Scarborough . . .	275 x 300

All shot EZXS

### NEW RECORD IN OHIO TEAM CHAMPIONSHIP MATCH—METALLIC SIGHTS—PRONE, KNEELING, STANDING

High—Zeppelin Rifle Club Team No. 2, with new match record—score 1087 x 1200.

D. A. Bashline . . .	281 x 300
L. C. Barrett . . .	281 x 300
Gus Ricketson . . .	268 x 300
James Hale . . .	257 x 300

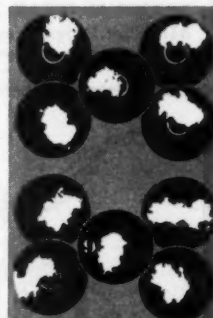
All shot EZXS

In all above matches, all shooters but one used Winchester Model 52 Target Rifles. V. Z. Canfield's rifle is a special with Winchester Model 52 barrel.

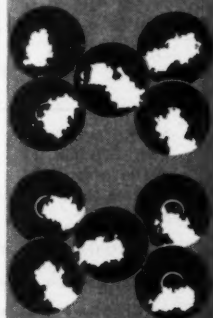
### YOUR MATCH EQUIPMENT

Precision EZXS month after month are credited with important records. What they are doing for other shooters, they can reasonably be expected to do for you, especially when teamed with Winchester's unequalled match rifle, Model 52. For more information about EZXS—or for shooting consultation—you are invited to write to Major John Hession, Shooting Promotion Division.

If you are thinking of getting a new rifle, send for the Winchester Model 52 Target Rifle folder. It will give you the detailed information you want.



L. C. BARRETT



MERLE ISRAELSON

Targets shot by Barrett and Israelson in the Club Team Match, which with those of Canfield and Bashline made a perfect score of 800 x 800.

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816 Barr Bldg., Washington, D. C.

## A Rifleman Went to War

He was an outstanding rifleman, a veteran Camp Perry shot who joined the Canadian army and fought with the C. E. F. at Flanders and on the Somme before the U. S. got into the War. Then when the inevitable came and Uncle Sam was forced to enter the conflict he resigned his commission as a Canadian Officer to fight under the Stars and Stripes.

Few, if any, veterans saw more front line action than the late Captain Herbert McBride, author of the new shooters' book "A Rifleman Went to War." In his book Captain McBride tells of his thrilling war time experiences and gives an accurate, interesting account of what a skilled rifle shot can do on the battle field and in the trenches. The book contains many facts previously unpublished regarding trick sniping, range finding and counter rifle sniping. It is a highly interesting true story of modern war as a real Yankee rifleman found it.

Admittedly the outstanding shooters' book of the year. Just the kind of story you will enjoy reading in your leisure moments, during vacation or on your summer travels. Send for your copy today. It costs but \$3.50, postpaid.

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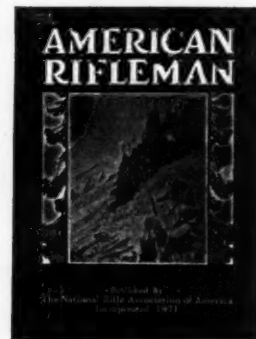
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Guns and the Anti-Gun Fanatics*

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one of the privileges of membership. }**



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6-36

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*I am glad to recommend the above applicant as a sportsman and citizen of good character.*

NAME.....TITLE.....OR MEMBER ☐ ANNUAL ☐ LIFE

ADDRESS.....



# The AMERICAN RIFLEMAN

VOL. 84, No. 6

JUNE, 1936

## N. R. A. SERVICE

**LEGISLATIVE DIVISION:** Looks after the interests of the shooters in Congress and State Legislatures, carries on the organized fight against unsound anti-gun laws, encourages legislation for the aid of civilian rifle practice and assists members to obtain permits to carry firearms to and from a range in states requiring such permits.

**THE AMERICAN RIFLEMAN:** This magazine is the official monthly publication of the N. R. A., and as such is "The Voice of the N. R. A." Non-political and non-sectarian in policy and free from commercial domination, it can and does speak freely, frankly and with authority on all shooting matters.

**TECHNICAL DIVISION:** Helps members with their personal shooting problems, reports in THE AMERICAN RIFLEMAN each month practical tests and critical examinations of new guns and equipment, and gives by personal letter advice on the selection of the right gun for a specific purpose, reloading, restocking, etc.

**CLUB SERVICE DIVISION:** Assists shooters in organizing local rifle and pistol clubs, furnishes detailed diagrams for the construction of regulation indoor and outdoor ranges, suggests a varied program and competition to keep up the interest of members, and generally assists affiliated units by passing along the successful experiences and ideas of other clubs.

**MEMBERSHIP EXTENSION:** Operates as a service division by furnishing members with sales literature and printed information so that they may explain to fellow sportsmen the value and benefits of N. R. A. membership and, moreover, because increased membership means an extension of N. R. A. service, it serves to benefit members in this way.

**COMPETITIONS DIVISION:** Conducts a year-round program of home-range matches in which members may win distinctive medals while practicing at home with rifle and pistol, aids state associations and civilian clubs in planning and conducting regional, state and local shooting matches, and gives members helpful personal advice on their individual target-shooting problems.

**JUNIOR DIVISION:** Provides individual and club memberships for junior shooters, boys and girls alike; conducts a year-round program of competitive and qualification shooting, and teaches Young America how to handle firearms safely and properly. No father should hesitate to support its good work.

**POLICE DIVISION:** Assists police departments in marksmanship training of their officers. Through the Association's far-flung contact and with the aid of experienced hands to carry on the work, this division is performing a public service which warrants the support of every good citizen.

**PUBLICITY DIVISION:** Endeavors to educate the American public through the public press to the fact that the man who likes to shoot is not a criminal and, although its services are intangible in character, it represents an important chain in the campaign "to make America, once again, a Nation of Riflemen."

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Another picture from our collection, and on which we have no information. Perhaps some reader can identify it for us.

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# POWDER SMOKE

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## Too Old To Shoot?

**H**OW often have we heard some well-loved old-timer say: "No, boys, I won't be out any more. I'm getting too old to shoot." Of course we have answered: "They *never* get too old to shoot." But there has been no conviction in our voices because in our hearts we have believed that youth has the advantage in those two prime essentials of marksmanship: vision and coordination.

While the problem of impaired vision has been practically solved by the inexpensive scope sight, there still remained (so we thought) the slower "reaction time" of the older man. But science investigates, and finds that the older man has *faster* reaction time than the youngster!

Capt. E. C. Crossman's article in this issue may well represent another milestone in the story of rifle shooting in America. It is a report which in effect says to the older man: "No need to retire to the side lines. No need to give up the competitive fellowship of younger men because tennis, rowing, handball are too strenuous. Get yourself a rifle, and a scope sight (if you need it), and take your place on the firing line to enjoy the sport which knows no age limit. Here is a sport which you can play as simply or as scientifically as you wish. Here is a sport you can enjoy alone, or with a few chosen cronies, or in a crowd larger than that which gathers in one spot for competition in any other sport in America."

Thanks to Captain Crossman, the ghost in the family closet labeled "Too Old To Shoot" has been permanently laid to rest, and many a man will see opened to actual shooting, years which he thought would have to be spent in "rooting" on the sidelines.

## Everybody's Crazy—But Us

**I**N A current "movie" hit, two sweet old ladies testify at a sanity trial that to their knowledge the accused man has been doing crazy things all his life. For the moment things look bad for the man on trial; but only for the moment, because the next question addressed to the two sweet old ladies is, "Do you know of anyone else in your town who is crazy?" "Why, yes," they reply, "everyone there is crazy but us."

It's funny in the movie, but not so funny in the shooting game; not so funny that many individuals, clubs, even some State Associations, take the attitude "Everybody's crazy but us."

For more than half a century the experience of shooters from the Atlantic to the Pacific has been digested into a code of fair, reasonable, and necessary shooting rules. They are not the rules of any one man or of any one group of men—or of any one generation of men. Every paragraph in those Rules has been placed there because *experience* has shown the need of it.

Yet we find the occasional individual, club, and State Association that must have special rules about this and special rules about that—a non-standard target; a rule for deciding ties or for handling protests; a plan of their own for enforcing time limits. Confusing to competitors, rendering scores useless for national comparison, they nevertheless go their own way insisting that the rest of the shooting world is wrong.

Rifle shooting will never attain in the eyes of the American public the stature of a real national sport until uniformity of rules and regulations becomes a national fact. The "Everybody's crazy but us" attitude must give way.

# *The* **AMERICAN RIFLEMAN**

JUNE, 1936

## Two Home-Made Rifles that Shoot

By L. K. SHAFFER

**M**Y PURPOSE in writing this is to show other amateur gunsmiths and riflemen of moderate means what can be done with a few dollars and the impulse to use spare hours in creating something that will be a lasting source of pride, and will measure up with the best.

A friend, whom we shall call Mack, and I decided that since we could not afford custom-built rifles capable of the degree of accuracy we desired, and fashioned to suit our particular fancies, we would set to work to design and build our own.

First, we went over the list of available single-shot actions, and finally settled upon the Stevens 44 Ideal as the basis of the two rifles. This action was selected because of its really good qualities, the ease with which a suitable barrel could be secured, and last but not least, the small cost for which it could be obtained when salvaged from otherwise worn-out guns.

The actions were obtained, and were carefully gone over and all necessary repairs made, including the fitting of new screws, pins, etc., where the old ones were worn or damaged. Some parts had to be made new, among these the extractors, which latter, however, were left until the new barrels had been fitted to the actions.

Our local hardware dealer was then consulted as to the possibility of obtaining a pair of barrels such as we had decided upon. These particular barrels were selected because of their proven fine accuracy. As regularly used on a certain rifle, they are too light for target work, and do not hold their zero well under varying sling tension. They are, however, hand-lapped, and are 27 inches in length. They are supplied on a bolt-action rifle of moderate price. When the barrels arrived we were quite agreeably surprised at the cost, which was only half what we had expected to pay.

Next, we selected from several old muzzle-loader barrels two of octagon form that were not far from our ideal size of 1 1/16 inches across the flats, we having decided that this would give us about the weight we desired. These barrels were draw-filed on the outside and worked down to a semi-finished surface. As none of the local machine shops were willing to undertake the job of boring these barrels out, we set up a jig and proceeded to do the job ourselves. We took a 9/16-inch drill (which was slightly less in diameter than the muzzles of the new barrels that

were to be used as liners) and welded to its shank a piece of 1/2-inch drill rod 30 inches long. This had to be done very carefully in order that the rod and drill would be in perfect line, so we set the job up in a jig before welding. The drill was ground with a flat point, and given a lead so that it would follow the original bore in the barrel. The barrel to be bored out was clamped securely in a vertical position to the side of the work bench, the bottom end being slipped over a stud in the floor. The barrels were left about 4 inches longer than necessary to allow for cutting off after boring and reaming, to give a finished job. The jig to hold the drill was arranged by boring through a hard-wood board a hole to fit the extension shank of the drill, and lining it up directly with the bore in the barrel. The board was held in position by braces from different angles. Pressure was supplied downward by a bucket containing weights which was tied to the end of a plank that acted as a lever downward on the top of the drill shank. This was a crude device, but in the absence of better means it was made to do the work by taking care to keep the drill lined up with the bore. The power for turning the drill was supplied through a handle clamped to the stem of the drill in such a way that it could be moved upward on the stem as the drilling progressed. It was necessary to remove the drill quite frequently to avoid clogging. This boring operation was probably the most tiring of the whole procedure, but with our time our own and no cause for hurry, it was not minded.

Then, with a 3/4-inch drill set up in the same jig, we bored down into the breech end of each barrel to a depth of about 6 inches, so that the breech ends of the lining barrels could be left as nearly full size as possible; this for strength. The whole length of the 9/16-inch hole was then reamed to 3/4 inch with tapered reamers, this being slightly less than the muzzle diameter of the lining barrels. The breech ends of the outer barrels were then cut off and squared so that the shoulder of the 3/4-inch hole was about 5 inches from the breech end. The bolt sleeves were then cut off of the lining barrels, and the latter worked down to a finished surface at the breech.

The new, inner barrels, and actions were then taken to a machinist, who fitted the barrels to the actions, and turned them down so that they would fit into the outer barrels with just

enough clearance so they would not touch except at the muzzle and breech. Any good machinist can do this job at a very reasonable cost.

The lining barrels were then put on the actions, and set up so that light could not be seen between the barrels and breech blocks, yet without putting undue strain on the action in closing the breech. We then slipped the liners into the outside barrels, and measured and cut off the muzzle ends of the latter, leaving just enough extra length to allow for working down to the liner length. After this had been done the barrel screws in the actions were loosened, the liners loosened in the actions about  $\frac{1}{8}$  turn, and the screws again tightened. The outside barrels were again slipped into place, turned back this same amount, and a chalk mark put on each outer barrel and its action to indicate the correct position of the barrels when soldering the liners in. This turning the barrels back on the actions was done so that the barrels, after cooling, could be turned up to give a good snug fit in the actions, as well as the correct headspacing.

Now each old octagon barrel was thoroughly cleaned of oil and dirt on the inside, the bore swabbed with soldering acid, and the barrel put into a frame previously constructed by Mack so that gas jets played upon it about 4 inches apart on each side, the jets being staggered. The muzzle end of the barrel was pushed tight against an asbestos pad, so that no solder could escape. Then the liner, still fitted to the skeleton action, was securely plugged at both ends with asbestos packing, and given a coat of flux on the outside. The outer barrel, which had in the meantime become hot enough to melt solder, was now thoroughly tinned on the inside by the use of a tinning iron made for the purpose. Solder, containing flux, was then put into the barrel, and the liner was started in the barrel and allowed to heat up gradually as it was worked in with a twisting motion. The outer barrel was always kept snug against the muzzle pad to keep solder from escaping, so that it would be forced back

around the liner and come out around the breech end, thus filling all space between the liner and outer barrel. When the liner was in the barrel all the way, the chalk marks were lined up, the gas flames turned off, and the barrel allowed to cool. Care was taken that the action was kept tight against the outer barrel and the chalk marks lined up until the barrel was cool enough to handle.

We then loosened the barrel set screw, removed the relined barrel from the action, cleaned all solder from the breech and muzzle, and knocked out the plugs in the bore. The bore was cleaned as soon as possible to prevent the acids, gasses, etc., from acting upon the polished steel surface. For this cleaning we used a good solvent and a light oil.

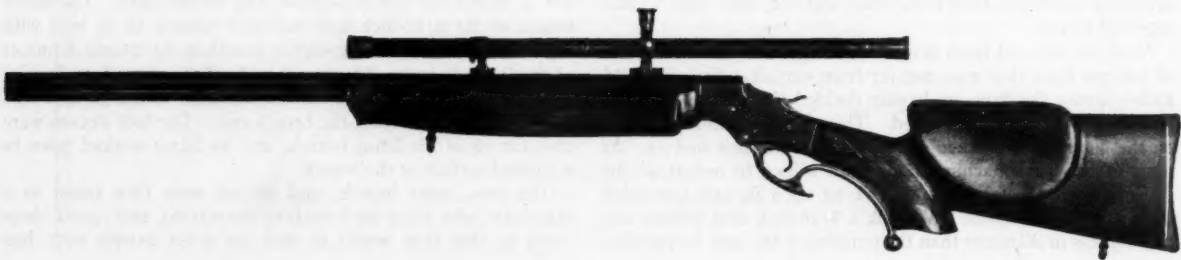
After plugging both ends of the bores with cloths to keep out dirt, filings, etc., we made new extractors from tangs of old files, using the old extractors as patterns. The barrels were put back on the actions and set up to the proper positions. The extractors were then put in the actions, held in the proper position, and the extractor cuts scribed with a sharp awl. The barrels were removed from the actions, and after fitting into the chamber a fired shell from which the head had been removed, each extractor cut in turn was filed in. The shell in the chamber was for the purpose of protecting the chamber walls from damage by the file. The extractor had to be carefully fitted so that the breech block would close tight against it and the barrel at the same time, with no space at the bottom of the extractor cut. The extractor, which had purposely been left too long, was then worked out with a round file of the correct dimensions, until a shell would just slip into the chamber without being scratched. This working-down had to be done with the extractor removed from the action so that no damage would be done to the chamber, and it

required a bit of careful work with frequent testing to get a good fit.

This job being completed, the next thing in line was to make a tool with which to cut the countersink for the rim of the shell. A hole was drilled and tapped in the end of a piece of drill rod, teeth were filed in the end of the rod, and the rod hardened and tempered. Then a stud about  $\frac{1}{2}$  inch long and just large enough to enter the inside of a fired shell at the rear end (the head of the shell having been cut off) was screwed into the hole. The piece of drill rod was just slightly larger in diameter than the rim of the shell.

A shell from which the head had been removed was fitted into the chamber, the extractor put in place, and the pilot of the tool inserted. A brace was used to turn the tool, the barrel being held in a horizontal position so that the steel shaving would fall clear and not cause scratches or burrs. This countersinking of necessity proceeded very slowly and carefully, so that the rim of the shell would enter just far enough to allow the breech block to come up snugly against the shell head, without marring it. This countersinking in these barrels caused the rifling to take hold of the bullet back through the first band, thus satisfying what we consider an important condition in the accuracy of any rifle. When the rim had been sufficiently countersunk, we removed the headless shell from the chamber, and cleaned off all burrs, being careful not to scratch the chamber.

At this point we decided that the lock time was a bit slow, so new mainsprings were made from spring steel, and tempered. The old springs served as patterns, except that the new ones were made slightly heavier to give a faster hammer fall. The hammer fall was then shortened by working the trigger slot forward on the



THE AMERICAN RIFLEMAN



hammer, to further lessen the lock time. In doing this it is sometimes necessary to work down the half-cock notch so that it will not catch when the hammer is released. The trigger pull was adjusted to just over 3 pounds, by polishing out with a fine stone.

The bore was thoroughly cleaned and a bullet pushed through to see if there were any obstructions. The first cartridges were then fired in the rifle to see if any adjustments were necessary before calling that part of the job completed. A few slight burrs had to be worked off here and there, and it was also found that the firing-pin holes were too large, allowing the metal of the shell to be driven back somewhat around the firing-pin. So the firing-pin holes were bushed, by boring out, tapping, and screwing in blanks, which were worked down to the faces of the blocks and drilled to the correct dimensions for the firing pins. Again some cartridges were fired, and this time everything was found to be in good order.

Now everything was in readiness for stocking the rifles and since we both had our own ideas as to what we wanted in a stock, we each proceeded to do this job on our own rifle. We both put on pistol-grip, cheekpiece stocks, but these varied somewhat in design, as can be seen from the photograph. Both stocks are of dense-grain American walnut, and are finely checkered on both forearm and pistol grip. In putting a pistol grip on this action it is necessary to mortise-in for the lower tang. The mortises were covered by inletting steel plates which had been shaped to fit the grips. They were screwed to the grips at the cap ends, and to the lower tangs just back of the triggers. The forearms were fastened to the barrels with a screw for

each. The stocks, after being fitted and worked down, were finished in odd moments with many coats of oil, and much elbow grease.

We did not like the old levers, so cut them off below the triggers and had pieces of our own design welded on, to fit along the inside of the grips and terminate in round balls, as shown. All exposed metal parts were then worked down and polished with emery blocks, and thoroughly cleaned

that would determine whether or not our work had been in vain. We had no machine rest so used the next best thing, a bench rest. Fifty yards were measured off, and a heavy block of wood set up for a backstop. The aiming point consisted of a piece of black cardboard through which a hole had been cut with a 12-gauge wad-cutter, a piece of white paper being placed back of the hole.

The ammunition used in the test was

Kleanbore, Kleankote, and Dewar Match, this being all we had on hand at the time. There appeared to be very little difference in the accuracy of this ammunition in these barrels, and both rifles seemed to perform about the same. We shot ten 5-shot groups with each kind of ammunition. The temperature stood at 56°, with a clear sky and practically no wind. For those who might be interested I am giving the sizes of the 5-shot groups:

Kleanbore:  $\frac{3}{8}$ ,  $\frac{7}{16}$ ,  $\frac{3}{4}$ ,  $\frac{5}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ ,  $\frac{7}{16}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ , and  $\frac{7}{16}$  inches. Average,  $\frac{1}{2}$  inch.

Kleankote:  $\frac{3}{8}$ ,  $\frac{3}{8}$ ,  $\frac{3}{4}$ ,  $\frac{5}{8}$ ,  $\frac{9}{16}$ ,  $\frac{11}{16}$ ,

$\frac{5}{8}$ ,  $\frac{3}{4}$ ,  $\frac{3}{4}$ , and  $\frac{7}{8}$  ins. Average,  $\frac{5}{8}$  inch.

Dewar Match:  $\frac{11}{16}$ ,  $\frac{3}{4}$ ,  $\frac{7}{16}$ ,  $\frac{1}{2}$ ,  $\frac{5}{16}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ ,  $\frac{3}{8}$ ,  $\frac{5}{8}$ , and  $\frac{3}{4}$  inches. Average,  $\frac{9}{16}$  inch.

We have tried these rifles from bench rests several times since, and have had results practically the same as the above.

The total cost of these two rifles was just a few cents over \$16.00, or just about \$8.00 for each rifle.

Are we pleased with our results? Well, would you be, if, after several weeks of spare-time work you suddenly awakened to the fact that you had built yourself a piece of artillery that would pile lead into so small a space? We're asking you.



I PUT MINE ON THE BENCH AND GAVE IT ITS FIRST TEST

and blued by the hot process. When this was completed the bores were thoroughly cleaned and the muzzles polished off and countersunk. The countersinking was done with a tool which we made and which was similar to a cherry for cutting a round-ball mould. The muzzles were then polished with a ball bearing of the correct size which had been spotted to a small rod. The polishing material was emery flour and oil, the bore being plugged near the muzzle to keep out the emery. Bullets were again pushed through from the breech to be sure that there were no burrs left on the muzzle.

We then assembled the rifles, mounted our scopes, and were ready for the test



ROCK CHUCK COUNTRY  
IN IDAHO

## A Rather Early Chuck

By P. H. MANLY

**E**VERYONE has heard about the groundhog being so frightened at his shadow when he sees it on February second that he "hides out" for another six weeks. Now, some folks know exactly what a groundhog is, while others think it is just "some kind of animal." Still others, less informed, consider him some kind of weather prophet,—perhaps connected with the weather bureau.

Now the weather here had been warm and sunny for a week before Groundhog Day, and on that day it was particularly warm and bright, with the snow all gone except the north-slope patches. So I was sure that Br'er Chuck would be out for a look around, but I was curious as to whether or not he would really hibernate for another six weeks.

So on the morning of the third my daughter and I went down the canyon an hour-

and-a-half walk to some good chuck rocks. Now the chucks in this country live in the rocks, probably because Old Man Coyote dug out and ate up all their foolish ancestors that tried to live in dirt burrows. We went part way down in the canyon, and then started toward home, below the rim-rock. As we were slowly climbing the girl suddenly said: "Oh, Daddy, there goes a great big chuck!" A big rusty-looking old chuck slowly climbed into his den not a hundred feet away, and we experienced disappointment

No. 1. We saw no more chucks on these rocks, so went across a little side creek and through some timber to the next rim-rock. As we looked at the rocks I was sure something on the top of a rock point did not look as if it had hard edges, though it was of the same brown color. I said, "Emma Lou, that's a chuck!" Just then the brown spot moved and disappeared. Another disappointment. But as we waited and watched, a head slowly appeared over the edge of the point. This was a target that needed a careful shot, and no fooling.

So the rest sticks were carefully set on the half-pitch slope, and the rifle slowly and carefully aimed a little low on the chuck's head. At the report the head disappeared, but the chuck was seen a moment later, rolling from behind the point. It fell about 25 feet, hit the  
(Continued on page 32)

BELOW THE LEDGE





FIG. 1—CIRCASSIAN WALNUT RIFLE-STOCK BLANK

## Walnut and its Use in Gun Stocks

By A. P. CURTIS

**W**ALNUT is and has for many years been used for stocks on sporting and military arms, there never having been discovered a better wood for the purpose. It is the only semi-hard wood having all the requisites of a good stock; it being tough in texture, light in weight, easy to work with tools, and possessing a readiness to take stain and a fine finish, together with ability to withstand climatic changes.

Black walnut has a uniform brown to dark-brown color, its formation producing a great variety of figuring that masquerades under many trade names, such as "feathered," "cross," "angel steps," "moon," etc.

Our gun manufacturers have available domestic black walnut (*Juglans Nigra*) from the Ohio and Missouri River basins, as well as most of our eastern states; and in spite of the large amount cut for military arms during the war, and its popularity in the veneered-furniture field, the supply appears to be ample for many years to come.

Our factories also have available imported walnut (*Juglans Regia*) stock blanks from Russia, England, France, and Italy; though of late they do not import

in the quantities they did 30 years ago, as our domestic wood answers all purposes fully as well as the imported. The exception is in the case of stocks for very light "feather-weight" guns, and shot-guns and rifles of the highest grades and prices. Considering its light weight and beautifully contrasted, mottled figure, there is perhaps no other wood that can equal Circassian walnut; and because of the scarcity of the genuine article, which comes from Russia's Caucasus Mountain area, this today costs as much as \$35.00 each for selected blocks or blanks containing sufficient wood to make one back stock or "buttstock" and from two to three front stocks or "fore-ends" for shot-guns, or one one-piece rifle stock; a price that prohibits its use in any but our most expensive special built-to-order arms.

Circassian walnut (Figs. 1 and 2) is a strong, tough, shock-resisting wood, light in weight and having a color varying from nut brown to deep dark brown, with still darker or blackish veins. The figure usually bears a close resemblance to that of American walnuts, but as a rule is more pronounced, the grain much closer, and the wood considerably lighter in weight. The term "Circassian walnut" primarily

referred to wood shipped from Circassia in the Caucasus, on the Black Sea; however, extensive cuttings have reduced the supply in that territory, so that today "circassian" walnut may have come from any of the southern Provinces of Russia.

English walnut is characterized by its variable grain, which is probably traceable to the broken topography of the British Isles. The texture, although varying, is slightly harder and the color usually darker and richer than in the case of Circassian, this wood being more like our domestic walnut in these respects. It has been used in England for firearms for centuries, with the result that the supply is now limited.

French walnut (Fig. 3) is noted for its uniform straight grain and its light color, —more of a gray or grayish brown. This wood is in demand for medium-priced guns, and a plentiful supply of it seems assured for some time to come.

Italian walnut undoubtedly possesses more of the desirable qualities for gun stocks than any of the other foreign woods, it being harder and of denser structure, with a dark rich coloring and very pronounced figure. This wood, how-

FIG. 2—CIRCASSIAN WALNUT: HEART AND CROSS FIGURE

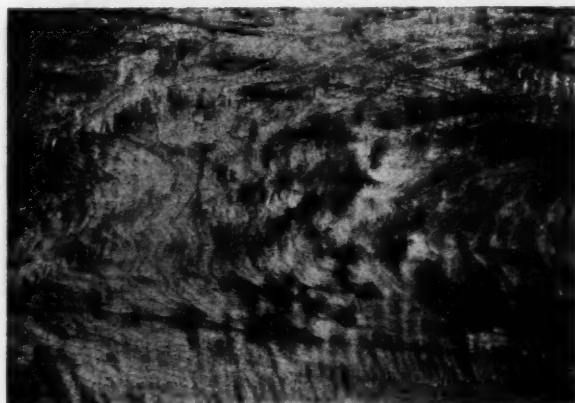


FIG. 3—FRENCH WALNUT





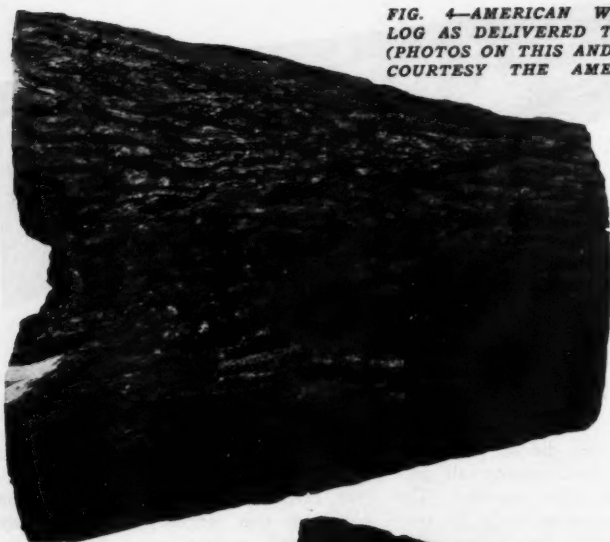


FIG. 4—AMERICAN WALNUT CROTCH LOG AS DELIVERED TO THE SAWYER. (PHOTOS ON THIS AND OPPOSITE PAGE COURTESY THE AMERICAN WALNUT COMPANY)

known as a "full-feather" stock, the figure showing equally well on both sides. Also, because of its oval shape the figure will be just as prominent on the top and bottom of the butt. This is well illustrated in the finished feather-figured stock shown in Fig. 7.

Many crotch-log center flitches like the one illustrated will yield but one full-feathered rifle or shotgun stock blank; rarely can more than two be cut from the larger boles. And it often happens that nature has not developed enough feather figure to make even one buttstock blank, all that can be secured being a shotgun front-stock, or fore-end, blank. After securing the fancy figured blanks, the remainder of the flitch is cut into back or front stocks for lower-priced arms, and even these must be free from knots and checks.

ever, is becoming very scarce and difficult to procure.

#### How Stock Blanks are Developed

I believe that our own domestic wood and its fabrication into stock blanks should make an interesting story, so let us begin with a log and follow it through to the finished gun stock. We shall take a crotch log as an illustration.

A great deal depends upon the methods used in sawing a log into flitches;\* and furthermore the proper locating of a stock-blank's pattern in relation to grain, figure, etc., has much to do with the value of the finished stock. All blanks, fancy or plain, should have straight grain in that part that will form the grip in the finished stock, in order that the stock may withstand the shock of continued firing, even though plain, figureless blanks are used on our low or popular-priced guns.

In opening a walnut crotch log (Fig. 4), the sawyer first removes a slab,† exposing the heart figure and its relation to the sap wood, which latter is of no value for stocks. In Fig. 5 the dark wood is the heart wood, and the lighter the sap wood. From the next flitch cut from this log—2 inches thick for stock blanks, it will be possible to get blanks with a wild figure that, when finished, will show a pronounced wave. The real cream, how-



FIG. 5—ONE SLAB SAWED OFF

Because of the small yield per log of finely-figured blanks, the cost of these to the arms manufacturer is of necessity high, and this cost must be passed on to the consumer. And it is this higher cost of stocks, together with the hand labor, engraving, gold inlaying, checking, etc., that constitutes the difference between a high-priced and a low-priced arm.

After the green stock blanks have been cut, their ends are dipped into hot tar or other resinous substance that will seal the grain and prevent drying too fast, which would cause end or seasoning checks.

The above method of cut-

ever, in a crotch log lies in the center flitch—one to a crotch (Fig. 6); several flitches being removed before reaching this "feather" figure. Here is where the forked tree has developed a series of wavy opposing streaks of wood growth, of contrasted coloring; and this section, when cut so as to form the butt of a stock, will give what is

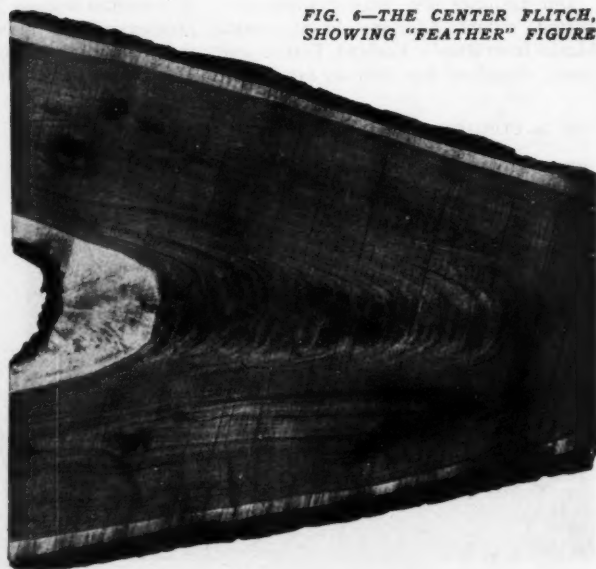


FIG. 6—THE CENTER FLITCH, SHOWING "FEATHER" FIGURE

\* A "flitch" is a strip cut from a log and having bark on its edges only.

† A "slab" is the first piece cut from a log, and has bark on one side.



ting a crotch log is followed in fabricating all logs. Many prefer stocks cut from a burl, which makes a beautiful stock when finished, though the cutting loss is enormous because of ingrowing bark and other defects. However, when secured free from imperfections a beautiful curly-figured stock is assured.

Walnut stumps, at the junction of the trunk and its main roots, also produce a handsome and rather uniform wavy figure, with considerable contrast in coloring. A perfectly matched set of blanks for shotguns (Fig. 8) is a rarity whatever the figure, and of necessity commands a good price.

Many of our factories are equipped with dry kilns for the more rapid and scientific conditioning of green walnut stock blanks. In each kiln can be stored as many as eight cars, or "bunks," each holding from 800 to 900 blanks, all of which are kiln dried at one time. The walnut blanks are piled on these cars in layers, with 1-inch square spacing sticks between each layer so as to permit free contact of live steam with each blank to prevent the too rapid drying of the ex-

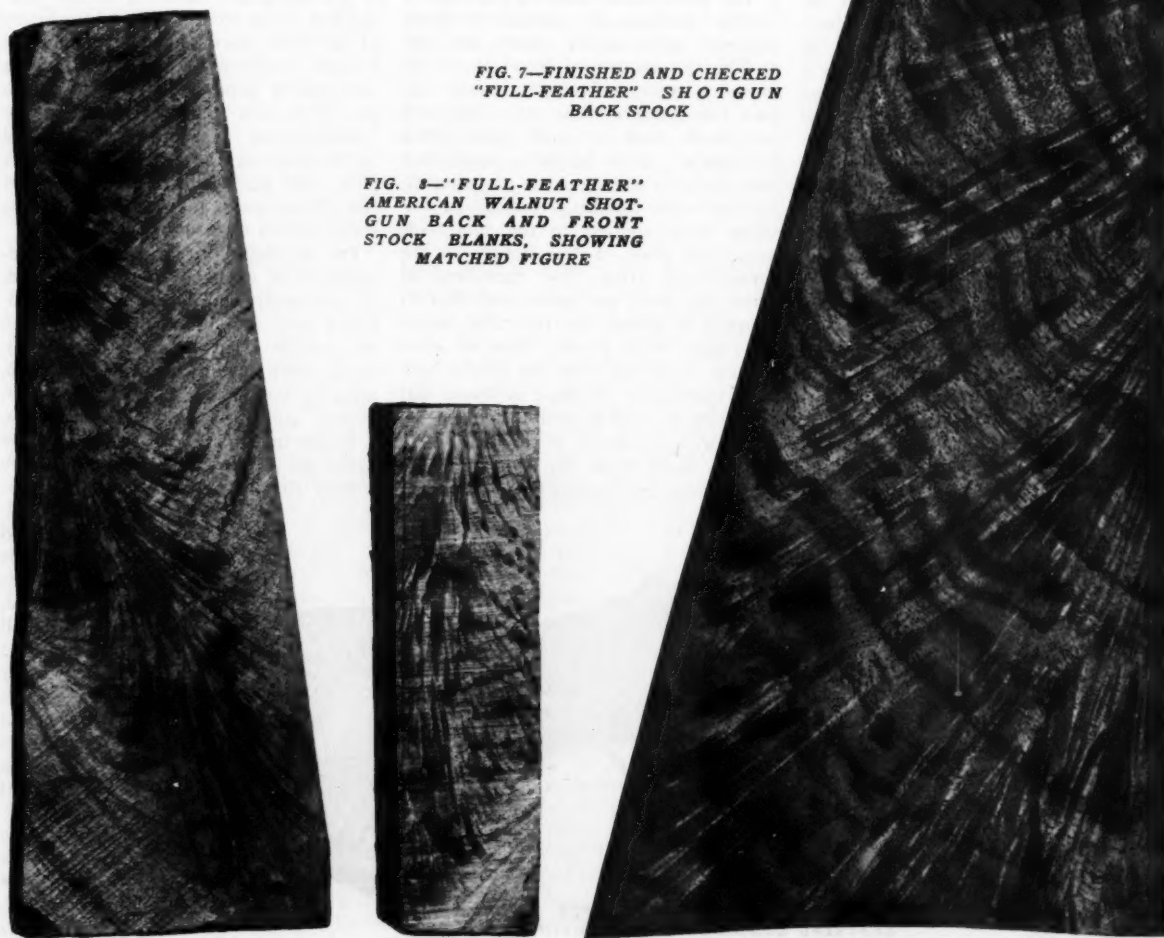
terior. This also permits free circulation of air to carry off excess moisture extracted from the walnut by the application of dry heat.

In condensing-type kilns the moisture is removed from the green wood by being absorbed by the air and later removed by condensating onto coils of pipe through which cold water flows. The condensed moisture drips from the cooled pipes into troughs that conduct it to the outside of the kiln. Recording instruments for regulating the humidity and temperature, and equipment for determining the moisture content of the wood, remove all guesswork from the treatment.

Green wood having a moisture content of 40-50% can have the moisture reduced to 5% in five weeks' time by this scientific treatment, whereas if the wood were conditioned by the slower, old-fashioned air-drying process in which it is stored in open-sided sheds, it would require two years to accomplish the same result. Some manufacturers still use this latter method, having on hand from two to three years' supply of blanks and replacing the oldest or driest ones, as used, with green

FIG. 7—FINISHED AND CHECKED  
"FULL-FEATHER" SHOTGUN  
BACK STOCK

FIG. 8—"FULL-FEATHER"  
AMERICAN WALNUT SHOT-  
GUN BACK AND FRONT  
STOCK BLANKS, SHOWING  
MATCHED FIGURE



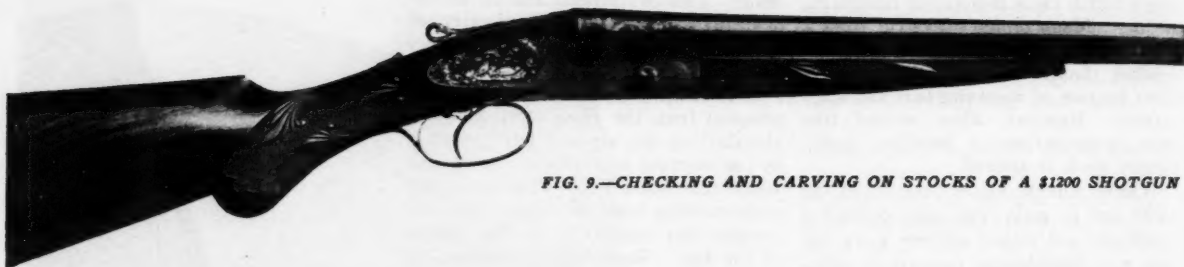


FIG. 9.—CHECKING AND CARVING ON STOCKS OF A \$1200 SHOTGUN

ones, which in turn are made into stocks as soon as they have become thoroughly seasoned.

Of late some of the more progressive mills kiln dry their fitches before cutting into stock blanks, and thus save the armories the necessity of air or kiln drying; the saving in freight for transporting dry walnut more than off-setting the cost of kiln drying.

#### Stock Making

The seasoned blanks are first cut to the size and general shape of the desired stock—either straight or pistol grip, Monte Carlo, etc. After milling a cut in the small end, if for a shotgun back stock, and a clearance cut for some of the lock mechanism—usually the hammers if a box-frame type of gun; and drilling two holes in the butt end that in the finished gun will be covered by a buttplate or recoil pad, the blank is put into a copying lathe and shaped into an exact duplicate of a master metal form. Next the wood is cut away for the reception of the frame tang, trigger plate, trigger guard, and the lock and safety mechanisms, etc., the turned stock being held in a fixture in an inletting machine. Beside this fixture is a steel master block which has cut into it a duplicate of all recesses that are to be cut into the wooden stock, and in these recesses a guide pin is moved about to follow the shape or outline, while at the same time a rapidly-revolving cutter is reproducing in the wooden blank a copy of the recesses in the steel block. Assuming that the cut for receiving a double-gun frame tang is made first, the stock-holding fixture is then given half a turn, carrying the stock with it, the master block at the same time being turned to present a guide recess for the cut

for the trigger plate, trigger guard, etc. These several cuts are made to gauges, so that there is very little hand work entailed in later fitting the metal parts to figureless or plain stocks.

If, however, the stock is of fancy-figured walnut that will be used for shotguns of the higher grades, these several inletting cuts are purposely left small, the surplus wood being cut away by hand to remove all cutter marks and insure a joining of wood and metal that is perfect. This hand work is done by the best workmen only, and is another item in the cost of our better-grade arms.

The front stock blanks go through a similar process in special machines equipped with master forms for controlling the amount of wood to be removed in order to obtain the desired contour, fore-end iron recess, etc. Both back and front stock are now again sorted and graded, those having a figure that when finished will show the most beautiful feather or variegated contrasting coloring being allotted to the best-grade guns, and those of less beauty to the lower-priced arms; for regardless of where the wood was grown—whether in America or abroad, its true value cannot be judged while in the form of stock blanks. It is only after the blanks have been turned into the shape of stocks that they can be graded, and the cream selected with any degree of certainty. Very often a rough blank that shows promise of an extra-fine contrasting mottled fig-

ure will turn out to be mediocre when shaped to the general outline of a stock.

Some double-gun manufacturers turn to finished size the grips only of some fancy-figured back stocks, the remainder of the blank being purposely left large to meet the requirements of special guns ordered with stock dimensions at variance with the accepted standards. These are later worked down to size and shape by hand.

#### Stock Fitting

The next step after the barrels, frame, and fore-end iron of a double shotgun have been fitted together ("action-fitted") is the fitting and fastening of the fore-end iron to the front stock, and the fitting of the front stock to the bottom of the barrels. Even on the lower-priced guns considerable hand work is necessary to get the barrels to nest properly in the fore-end wood. Very little fitting is called for in inletting the frame tang, trigger plate, and guard into the back stock of the cheaper guns, and installing the necessary screws to hold all in place.

On the higher-priced shotguns considerable hand work has to be performed, as previously explained. Here the inletted cuts were purposely made small to provide wood to be cut away by hand, which the stocker proceeds to do, using for the purpose a variety of chisels, gouges, and special woodworking tools.

Before the frames, etc., selected for the better grades have been delivered to the stocker they have been carefully draw-filed and polished by hand on all surfaces that will be embedded in wood, to remove all machine marks; and the stocker in turn removes all cutter marks in the stocks when fitting-in these several metal parts.

In order to show where wood will have to be cut away, the metal is



FIG. 10—IMPORTED DOUBLE EXPRESS RIFLE; CHECKING COMBINED WITH CARVING

usually lightly coated with a mixture of oil and lamp black, which is deposited on the wood at the places where the metal makes contact, thus showing the stocker where wood will have to be hand-tooled away. The blacking and cutting is repeated many times before the metal is let into the wood so as to form a perfect fit at all contacting surfaces. During all this fitting the stocker has to keep in mind the drop, length, pitch, etc. that the customer desires. After all the metal has been properly let into the wood, it is held in place by installing the proper screws.

The next step is to remove all superfluous wood. This includes cutting off the butt to give the desired pitch and stock length, and attaching buttplate or recoil pad as the case may be; also working the comb and heel down to the drops specified, and the general shaping of the stock, as well as attaching a grip cap if it is a full-pistol-grip gun.

### Stock Finishing

In describing the finishing of the wood we shall consider arms of the higher grades. The stocks are polished by hand, no part of this operation being performed on polishing wheels as in the case of low-priced guns produced in quantities.

The first step, in the case of a double gun, is to hand-polish all metal closely adjacent to the wood of the stocks, by first draw-filing the metal with fine-cut files, and then polishing with emery-cloth strips wrapped around a file, using for each succeeding polishing a finer grit of emery than the last, the final polishing being with the finest flour-emery cloth, slushed with oil. In all of these several polishing operations the operator purposely laps over on to the adjoining wood; the metal taking the brunt of the polishing, as the wood, being softer, would otherwise be cut away too fast.

Next all file marks are removed from the wood by going over several times as in polishing the metal, but with sandpaper instead of emery cloth; the sandpaper, of diminishing degrees of fineness, leaving the wood free from all marks, with its surface perfectly smooth.

The entire surface of the wood is then dampened by rubbing with a wet cloth, the moisture raising the grain of the wood. After drying, the raised grain is sandpapered off smooth, very fine sandpaper being used. This wetting, drying, and sandpapering is repeated until the wood no longer responds to moisture. It takes in all of the stock, including the wood adjacent to the metal of the frame, trigger plate, guard, and fore-end iron.

The next step is the application to the wood of some form of finish, this being done with all metal parts in place. A wood filler is first applied to fill in the pores or grain, all surplus being removed

as soon as the filler has sufficiently dried, by briskly rubbing with coarse-woven cloths. The wood is now ready for the application of oil, varnish, or the lacquer which of late years has become so popular. Oil finish is invariably employed on our better-grade guns, which is as it should be, there being nothing better for bringing out the figure in the wood, and filling and covering the wood with a moisture-resisting seal that adapts itself to a fine polish, the lustre of which is enhanced by use. Several coats of linseed oil are applied, each coat being rubbed off as soon as it has dried enough to become "tacky," and another coat applied. This is continued until the surface of the wood is well filled and smooth. Then a polishing with a piece of felt charged with pumice stone and oil, followed by a brisk rubbing with rotten stone and oil, completes the finish.

On guns of the best grades another operation is performed, consisting of a brisk rubbing with the palm of the hand

*Charles Askins has been delayed in preparing his article on quail shooting in New Mexico, but has promised to let us have it as soon as circumstances will permit. The article on pistol shooting by Charles Askins, Jr. was received in this office too late to make this issue. The Old Coach hopes to resume his page in our next issue. He has been too busy of late to prepare the material.*  
—EDITOR.

and a dust of rotten stone, that increases the sheen. The wood is now divested of all metal parts, and checkered.

If the stock is for a rifle, after the several operations necessary to form a "nest" for the barrel, receiver, magazine, guard, and magazine cover plate, etc., have been performed, the wood receives only the several sandpapering and finishing operations outlined for double-barreled shotguns with metal frame, etc., attached.

The next major operation is the checking on guns of the better grades. The lowest-priced rifles and shotguns are without this highly-essential feature of checking because of the expense involved in its execution. It is this saving, plus other economies, that enables these arms to be sold at popular prices.

### Checking and Carving

The checking on rifle and shotgun stocks is there for a purpose; it roughens the wood at the parts that are grasped by the hands when the gun is held in shooting position, thus enabling the shooter to control the arm more readily than would be possible were the holding surfaces left smooth.

On popular-priced guns the checking is coarse and plain—usually about 16 lines to the inch, but on the more expensive grades fine checking of from 22 to 32 lines to the inch is the rule, and designs more ornamental and attractive are employed. On the most expensive, special-to-order arms the lines are still finer, and scalloped borders and attractive bridging are used; some employing fine checking in combination with carved borders (Fig. 9) to give a pleasing, rich effect that admirably harmonizes with extensive engraving and precious-metal inlays. A less elaborate combination of checking and carving will be noted in Fig. 10. Not as ornate, but pleasing nevertheless.

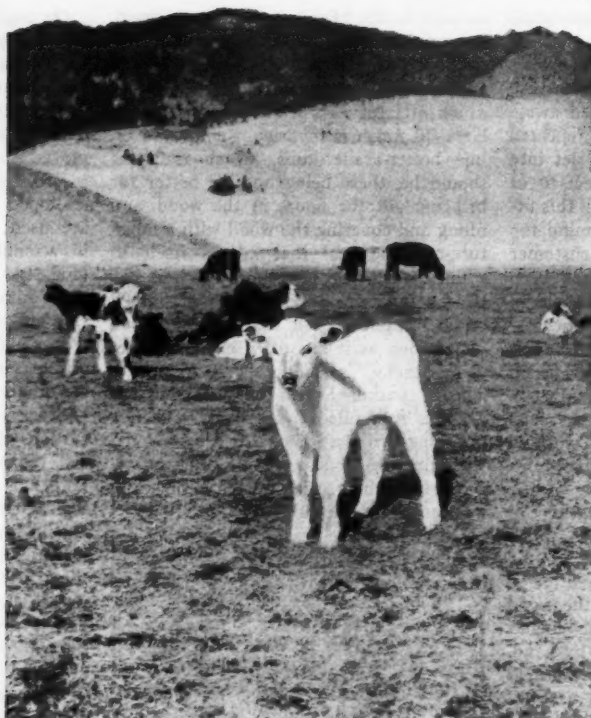
Stock decorating is a strictly hand operation, the workman using several special tools for the purpose. The artisan here has a field in which to display his skill that in the better-grade arms is equalled only by that of the artist that executes the engraving and gold inlay on metal parts. In checking as well as carving a stock, the workman first lays out the design, using a metal template the outline of which is transferred to the stock by scratching lightly into the oil or lacquer finish, and later tracing or covering the surface to be checked with line checking only, at approximately 35-degree angles. These intersecting lines are then filed separately with a V-shaped checking file that leaves the raised wood between the lines in the form of minute diamonds, each a duplicate of all the others. If the design of checking calls for a plain border, he (or she) next cuts a single line or frame for the checked area, using for the purpose a bordering tool having a concave rounded clearance between the two rows of cutting teeth that will produce a border consisting of two equally-spaced lines with a convex rounded beading between them.

If, however, the checking is to have a scalloped or carved border, special templates are used for transferring to the stock the general outline, and then the carving is performed by the use of wood-carving tools and gravers; the operator later smoothing up all cut or "raw" areas by filing with die-sinker's "riffers."

After the checking operation is completed the raw wood must be protected against moisture by coating with lacquer or liquified beeswax (wax cut with turpentine), which seals the pores or grain of the wood against moisture and at the same time gives to the checked and carved parts a finish that compares with that of the rest of the stock.

In stocks for the lower-priced arms this sealing of the checked portion is usually accomplished by applying a coating of oil to which a little stain has been added, so as to match in color the rest of the wood, surplus oil being wiped off with cloths.





EASY PICKIN'S FOR A  
COYOTE

## The .270 and Coyotes

By HENRY W. BENSON

**A**LONG in 1928, when I felt that I could afford to satisfy that urge to buy a new rifle, I definitely decided on the Model 54 Winchester but hesitated over the choice of caliber. The .30-'06 was hailed far and near as about the most accurate load that had ever been put together. It seemed to have everything, from ultra-high velocity in some loads, to bone-smashing penetration in others, and was considered **THE** rifle for American game from woodchuck on up. Nevertheless, I was intrigued by the ballistics of the .270, and eventually settled on it as my choice.

In this particular section of Idaho our big game consists of coyote, antelope, mule deer, mountain goat, and mountain sheep, while elk are now available in some counties. For years I hunted this type of game, with the exception of elk, with a fellow who used a .250 Savage Model 99, and whose success with this rifle was phenomenal. Therefore I had had ample opportunity to observe the deadly effect of a light high-velocity bullet, and it was easy for me to imagine the devastating effect the much heavier .270 bullet must have

when driven at a still higher velocity.

The fine accuracy of this rifle and the extended range I get through the use of a Lyman 5A scope, together with the construction of the .270 bullets, have created a brand-new problem for me.

Prior to the purchase of the scope I had killed twelve coyotes with the .270. They were all killed at ranges varying from 150 to 250 yards, with the exception of one, that was killed at 400 yards, the bullet in this latter instance striking a hip bone and ranging ahead, killing instantly. In every instance the bullet functioned perfectly, killing most of the animals in their tracks as if struck by lightning. Sixty yards was the farthest that any ran after being hit, which speaks mighty well for the .270, as the coyote is noted for its tenacity of life.

When I mounted that new scope on my rifle I vowed that the coyotes in my immediate vicinity were going to pay for it. That's a pretty large order, and I am now of the opinion that perhaps this is going to be about the hardest money I ever earned. However, I am having the time of my life.

There is no sportier animal on four legs than the coyote. It has intelligence and cunning second to none, not even the wily fox. With the speed of an antelope, the ability to travel when literally shot to pieces, and a sixth sense perfected to the Nth degree that seldom fails to warn it of imminent danger, it is mighty well capable of keeping its illusive gray hide intact. Lack of food in midwinter forces the coyotes down to the ranches along the river bottoms, where they prowl around among the stock in pasture, catching rabbits and mice and occasionally killing a sheep or calf as the opportunity affords. They will feed on the carcass of domestic animals, but much prefer to catch their own meat if it is plentiful.

After I had sighted-in my scope at 400 yards with Western 130-grain open-point ammunition, and made note of the elevations for the various other ranges, I was ready for the hunt. The next morning at dawn found me mounted and on my way to the big pasture about a mile south of the ranch house, where a number of cattle were grazing about among the willows,



and where "el coyote" liked to pursue the nimble jackrabbits. As I jogged along near the far end of the pasture I saw a coyote duck under the fence about 500 yards ahead, and take off through the sagebrush with that long easy lope of theirs, giving me a characteristic over-the-shoulder look as he disappeared in a little draw. I drove in the spurs and was after him on the run, strapping the sling on my arm as I went, and heading towards a low knoll that would give me a better view. I could see the coyote as he reappeared,—and he wasn't throwing the race, either. However, I had gained a little on him, so slid my horse to a stop and sprawled down in the snow for a prone shot. While I was wriggling into position and setting the elevation for 400 yards, I lost sight of him, but by looking through the scope and moving it about in his general direction I was able to pick him up again. He had stopped and was standing broadside watching my horse, as that fickle cayuse hit the breeze for home.

I looked over the scope trying to see him without its aid in order to estimate the range more accurately, but so well did he blend with that sage and snow that it was impossible to see him. Through the scope, however, he loomed up clear and sharp, so I held the cross-hairs on the line of his back, and fired. The recoil blotted him out of the picture for an instant, and when I got him back in again he was doing a ring-around-the-rosy, waving his tail and biting at his side. In a few seconds he came to enough to realize that something considerably more potent than a bee had stung him, and he headed for the mountains, doing his best but showing unmistakable signs of being hard hit. After recapturing my horse I loped back,—saying things into a knowingly-cocked ear as I went. I soon picked up the blood trail, and fully expected to find the coyote dead at any time, such was my confidence in the .270. But he had run only a short distance up hill, and then turned back toward the willows half a mile away, whence he had come. I followed at a trot, hoping to get another shot before he reached the brush; but I

was late, having spent too much time catching that fool horse. After about a quarter of a mile the blood began to ease up, and by the time the coyote had reached the willows there were only about a dozen drops to the rod.

It was plain that the bullet must have mushroomed very little if any. The next two hours I put in forcing my way on hands and knees through the thickest tangle of willows, gooseberry, and wild rose briars that that coyote could find. He would bed down every little way, and move on only when I approached to within fifty or sixty yards of him; but he kept in such thick cover that I never got a glimpse of him. He undoubtedly was shot clean through, and by all the laws that govern flesh and bone and high-velocity projectiles, I should have had his pelt on a stretcher long since; but on he went, worming his way through the very thickest brush along the creek. Eventually I was forced to give up, and made my way back to the horse, considerably tattered and scratched, and completely exasperated.

The next morning I struck out on foot, and at daylight was following an old wil-

low-grown irrigating ditch that wound its way along the edge of a low, gravelly bar overlooking a wide belt of bottom-land. Presently I saw two coyotes cross an open strip of pasture about half a mile away, and disappear in the willows of the bottom-land. As I watched through the scope I could see one now and then as they worked back and forth through the willows, or came to the edge occasionally to stand and look out across the pasture. At length one walked out into the open within 300 yards of where I sat on the ditch bank, but he saw the slight move I made to line the scope on him, and darted back, to reappear a few seconds later peeking cautiously around a clump of willows. I watched him through the scope as he pushed his nose into view until his head and shoulders were exposed. At the crack of the rifle he executed a back flip-flop, so quickly did he change ends. As I hurried over to see if I had collected a pelt, the other coyote came tearing out of the brush and across the open pasture, looking to right and left and evidently unable to locate the sound of the shot. I dropped down to sitting position, adjusted the sight

for 400 yards, and gave him a whistle. As he stopped broadside I held a trifle low, and squeezed. When the rifle had settled back from the recoil I picked the coyote up through the scope. Down he was, flat as a pancake. He lay there for fully half a minute before he moved a muscle; then just his head moved, weakly at first, flopping up and down. Then his legs began to kick violently, and with a wild scramble he regained his feet and made for cover. I was so sure that he was down for keeps that I made no effort to shoot

#### THE WRITER AFTER A SUCCESSFUL MORN- ING'S HUNT

again until he was making his getaway, and then it was useless to shoot at so small an animal on the move at that distance.

I went over to where the first coyote had been, and confirmed my suspicions that I had scored a clean miss; then made haste to the spot where the second one had taken the count. There was the impression of his body in the snow, showing—by



the hole the blood had melted—as plainly where he had been hit as if I had been looking at his carcass. The bullet had apparently slipped through like a needle at about the diaphragm and a little above center, the shock so near the spine having a temporary paralyzing effect. The trail in the snow showed blood on both sides, but considerably more on the off side, indicating that the bullet might have upset slightly. There followed a repetition of the brush-crawling tactics of the previous day, with about the same result except that my temper was, if possible, worse. I am decidedly no swamp angel.

That evening I took the cartridges from their case with the idea of doctoring them up in some way to increase their effectiveness at long range. On the box it stated that the Western boat-tail bullet had an unusually heavy jacket,—about twice the thickness of that of ordinary bullets. This, I decided, was the trouble. I knew that filing off the open point down to the lead would weaken the jacket and increase the striking area of the point enough so that the bullet would blow up at longer ranges, but it would also increase the air resistance and perhaps impair the accuracy enough to make fair hits impossible. After considerable experimenting I hit upon the idea of splitting the point down to the lead, using a sharp, thin, pocket knife as a saw. I worked over about a dozen bullets in this manner, and the next morning at daylight found me stalking carefully along the same willow ditch that I had followed the day before, with the trusty rifle crammed full of the split bullets.

As I rounded a bend in the ditch I spied a coyote about 100 yards out in the pasture, poised with foot up and head cocked in an alert, listening attitude as he tried to locate a field mouse maneuvering under about a foot of snow. I ducked back out of sight, and then crawled up behind a bush where I could get a clear view, taking the sitting position as quietly as possible. At that he heard me and looked around before I could shoot, and was away like a streak for about 50 yards. Then he suddenly stopped and turned clear around to face me, craning his neck from side to side as he endeavored to identify the huddle I made; but he was off again before I could get a shot. At a little over 200 yards he stopped and turned broadside, and as the cross-hairs quartered his shoulders I touched her off. I could hear that familiar thud as the bullet connected, and he went down, writhing about in the snow; but in a second he regained his feet and made off, his tail winding like a windmill. He collapsed after running about 40 yards. The bullet had struck just above the heart, blowing a 3-inch hole in the opposite side. Only a coyote could have regained its feet after such a shock. That

split bullet had certainly wrought plenty of havoc in this particular case, but any .270 bullet at that range should have done likewise, and I was still at sea as to the performance of these bullets at extreme range.

I had just picked up my coyote and was lugging him towards home when I saw a jack rabbit break cover about 200 yards down the pasture, coming out on a hard-packed rabbit trail, his ears laid flat and his legs one continuous blur as he utilized to the utmost the amazing speed that these creatures are capable of. About 50 yards behind was a coyote in hot pursuit. As I swung around to shoot he turned at right angles and ran straight away down the pasture, dodging in and out among patches of rye grass and salt brush. I made a dash for higher ground where I could see from the prone position, and took a shot when he stopped at about 600 yards, but with no effect other than to put more distance between us. But the thing that surprised me was the high-pitched screaming sound the bullet made in flight. Unless my ears were sadly out of kilter that bullet was singing a song that was plumb out of tune. Later that day I tried another of the split bullets at a long range, with again that high, wailing sound.

After this episode of the whistling bullets I purchased some Winchester ammunition of the sharp-pointed expanding type, and on sighting-in found that it gave exceptionally fine accuracy and noticeably flatter trajectory than the Western. I have made some fine groups with this rifle and ammunition, including a five-shot group at 440 yards that can be covered with one hand. For all sighting-in and test shooting I use a muzzle-and-elbow rest.

The next opportunity I had at a coyote I was spinning along the highway in my car, about three miles south of Grant, Montana. On the right was a wide, wild hay meadow dotted with haystacks and literally speckled with cattle. The wind had swept the snow off, leaving the hay stubble brown and smooth. As the car rounded a point and dipped into a hollow I caught sight of a grayish-colored bump out on the smooth expanse of the meadow. I stopped the car and backed up to where I could see. A glance through the scope showed a coyote lying flat on his belly about 250 yards away, and facing me, with his head on the ground and ears laid flat. I got out and, taking a rest over the hood of the car, touched one off. The coyote rolled over on his side, apparently stone dead. I reloaded and watched carefully through the scope, determined to give him another if he so much as wagged his tail. However, when he began to roll and tumble about in an effort to get up I found it mighty hard to hold on him long enough to get off a shot. As he regained his feet and was doing a tail spin I let him have

it, knocking him flat again; but he refused to stay put. The cattle, attracted by the sound of the shots and the peculiar antics of the coyote, came running from all sides to see what the commotion was about, and as the coyote crippled away they closed in behind, cutting short the barrage I was about to lay down in an effort to stop him. All the way across the field they followed him so closely that it was impossible to get in another shot, and as I watched, thoroughly disgusted, the coyote disappeared in the willows half a mile away.

There seems to be no alibi that will cover this case convincingly, so I'll admit that I did some mighty poor shooting. However, it beats me how a coyote could still travel after being knocked down twice by a .270.

At the first opportunity I took another early morning ride to my favorite stand along the old willow ditch. I followed it down for about half a mile without success, but on my return I caught sight of three coyotes about 200 yards away trotting along a snow bank that had combed over a low gravel bar. They were on a slight elevation, and were just visible through the tops of the willows. I got off my horse, flopped down in the snow, and was ready in a second, as I already had the sling on my arm. The situation didn't look any too promising even though the coyotes had stopped. Those willow tops, while not very heavy, might deflect a bullet enough to score a miss; so I waited. Presently one coyote moved a few steps, and put his head down to peer through a small gap in the willow tops, giving me a clear view. The bullet struck him in the mouth, cutting off an upper tusk and shattering the lower jaw, and entered the breast where the neck joins. As the two others disappeared instantly I made a desperate sprint to catch my horse as he high-tailed it for home, but as the snow was nearly knee deep I soon winded, and he trotted serenely on, leaving me to pack my coyote home through a raging blizzard that struck suddenly and with such force that it was torture to face it.

In the past few years I have read a number of articles about the .270, and one and all bewail its lack of penetration. According to certain sports writers, it has failed on about everything down to woodchuck, and has produced superficial wounds no end, all because of lack of penetration. One article in particular in the January 1935 issue of *THE AMERICAN RIFLEMAN* under the title of "Game Killing Experiences With the .270 Winchester" cites several failures on deer, two of which were small bucks. One buck saved himself from being shot through the heart by stopping the bullet with a shoulder bone about the size of a man's thumb and less than two inches from the chest cavity.

(Continued on page 32)

# A Schuetzen Martini Hornet

By WADDELL F. SMITH

"WHEN a dog bites a man, think nothing of it; but when a man bites a dog, that's news!" So runs the old saying, but picture a strange reversal of circumstances in which a gun, instead of protecting the life of its owner, is the cause of his losing it; for such was the case with the gun illustrated herewith.

This rifle was made on special order by Kessler in Germany for a wealthy sportsman in Texas, and is of modified Schuetzen type with Martini action, and built for the 9-mm. rimmed cartridge. Taken into Mexico by its owner on a hunting trip, it chanced to come under the gaze of some Mexican bandits, who thought more of it than of its owner's life, and so took both. The mystery of the owner's disappearance was not cleared up until some months later, when the bandits came into the camp of an American mining engineer in Mexico, and of-

rifle to Dayton, where he delegated to John Oberlies, 3217 East Fourth Street, the work of reconditioning. Mr. Oberlies does most beautiful stock and ornamentation work, and he did not belie his reputation on this job. The stock was dressed down where the cheekpiece and thumb-rest had been, and refinished. Then he made a new buttplate, and a mounting for the Lyman rear sight.

Upon the passing of its owner I was able to purchase this rifle, and for several days I felt that I must be in a dream, for it seemed impossible that a rifle like this could really be mine. After much careful thought and consideration I decided that as a 9-mm. the rifle would be of no practical use to me, so began investigating its possibilities as a Hornet. Some collectors strongly advised against altering it in any way, but I spent a delightful Sunday afternoon with Mr. Nied-

of lining this barrel, saying that he hated to alter such a fine rifle. But my insistence won in the end, and in about ten days I had the rifle back again, most beautifully adapted for the Hornet cartridge. Mr. Diller also fitted blocks for my Lyman 5-A scope. Great credit is due him for his work in relining and chambering, for the rifle puts them all in the same place, day after day, in good weather or bad. Scientific dope to the contrary, this is one rifle that is not temperamental, for it maintains its center of impact absolutely,

SHOWING ENGRAVING  
ON UNDER SIDE



THE RIFLE IS NOT ONLY A TAKE-DOWN,  
BUT THE ENTIRE LOCK  
MECHANISM IS DETACHABLE

ferred the rifle for sale. Becoming suspicious, the engineer played for time and sought help, and was all set for the bandits when they returned. A fight ensued, and though the bandits escaped they left the rifle behind.

The rifle had been sadly mistreated, the ornamental buttplate being missing, as well as the rear sight. Also, the cheekpiece had been whittled off, as well as the thumb-rest. The new owner brought the

ner, at Dowagiac, Michigan, hoping that he would be able to make an additional barrel in Hornet caliber, the rifle being a takedown. But such a barrel proved to be prohibitive in cost, because of its octagon shape and the fastening lugs at the breech end. So back to Dayton I went to see Charles A. Diller, who specializes in lining and relining barrels for the .22 long rifle and Hornet cartridges. Previously Mr. Diller had refused the job

regardless of how often it is taken down and reassembled. The standard Winchester Hornet cartridge performs best in it; in fact I believe Mr. Diller does his chambering with this particular cartridge in mind.

Due to the chivalry of American gun-lovers, no one has as yet forcibly taken the rifle away from me, though some have craftily attempted to trade me out of it. However, it is my intention to keep it always.



AS THE RIFLE LOOKS WITHOUT SCOPE





CLARENCE HUTT, OF WINCHESTER, PRESSING THE BUTTON THAT FLASHES  
THE LIGHT IN THE CLAY BIRD

## The Lapse of Time

By CAPT. EDWARD C. CROSSMAN

**A**S A CHRONOGRAPH, the human mind is a pretty crude instrument. It can appreciate the lapse of time only in very large quantities or when translated into other mediums, such as the travel or speed of an object.

A "Long time" may be anything from the five seconds between "Flag's Down" and "Targets," to fifteen minutes spent waiting for one's best girl, or the half-hour waiting for the dentist.

But small fractions of a second may become quite long intervals and be fully appreciated by this crude chronograph of ours when translated into duck travel, or car travel, or shot travel, or bullet travel.

That firm belief of the tyro that when he makes up his mind to pull the trigger, it is pulled then and there and no foolin', and that other belief that the travel of a charge of shot is practically instantaneous, result in a long and practically unbroken series of misses when the tyro tries to hit crossing objects with the shotgun, such as game birds, or clay birds in Skeet.

The only reason the tyro manages to get down enough birds to make a pan smell

is because of the proportion of straight-away shots he gets in the field—and those in which the poor bird gets a rich plastering of chilled shot before it even makes up its mind to fly.

Probably the most amazing lapse of time of which the mind is blissfully unconscious is that gap between the moment one makes up his mind to do a thing—and then does it. I do not refer to Father lugging the ashes out of the cellar, or Little Willy washing his face, because this sort of instance contains another serious error: they really hadn't made up their minds, you merely assumed they had. I refer to what the scientific sharks call "Reaction Time."

While this discourse confines itself to that reaction started by the eye, the same lag applies to reactions imparted by hearing or touch. Slap a tensed and nervous man on the back when he is not expecting it—the cullud brother passing through the graveyard late at night, for instance—and you get an immediate reaction as far as human perception goes. But it is not immediate even then, although likely to

seem very prompt indeed. Tickle an alarmed and nervous cat with a BB pellet, and you get a speed of reaction that makes the cullud brother seem like a man walking in his sleep.

The psychologists have known for many years that the chain of events from the impulse to move, to the actual move on the part of the human being, is a very slow one. For example, that average time would let the Springfield bullet travel nearly 200 yards.

With laboratory equipment consisting, as a rule, of a key to close a light-bulb circuit and start a time-registering device, plus a key for the victim to press when he sees the light, to terminate the time-registration, the psychological sharks have proved that the human chain of events from the eye's command to move, to the actual movement, is distressingly long.

It would be interesting to measure the reactions of that "Brown Bomber," the quiet and inscrutable colored boy Louis, who blasted out of the heavyweight race those slow specimens, Carnera and King Fish, by terrific and beautifully timed



blows as scientific and nearly as fast as rifle shots. Probably by the time this story is in print he will have demonstrated once again in his meeting with the quiet and retiring little violet from California, Mr. Baer.

Quite a number of years ago one of the smartest men in the arms and ammunition game, and the head of the most progressive arms and ammunition coalition in

ing from the scientific angle, and it is too bad to inject this cold viewpoint into driving and liquor: it takes all the romance out of things.

Mr. Olin found that eating affected his reaction time, candy, for instance, having its effect. Also that the time elapsing after a meal had its effect, and that two or three hours after eating was the best time for him to shoot.

belly of his, and enabled to touch Old Betsy off at the right time, by a single shot of some hot liquor that "takes right hold."

I remember one worthy German who could shoot like the well known house afire after he had wrapped himself around as many schooners of beer as would serve to lay out the average man for the rest of the blissful day. This in the Schuetzen



THE TEST EQUIPMENT, WITH THE LIGHT IN THE TARGET

the world,—Mr. F. W. Olin, turned his attention to this delay or reaction time. He wanted to find out not only how long it was with the average shooter, but also what effect the individual experienced from certain drinks, food, lack of sleep, and other causes.

So he got hold of an old chronoscope and worked out many experiments. One of the conclusions was that a drink of hard liquor adversely affected his reaction time. This of course is all wrong. We now know that one drink of hard liquor improves a man's driving and the speed of his car, that two drinks give him utter confidence that he can out-drive any so-and-so he may meet on the road, while three drinks convert him into none other than Barney Oldfield in his prime.

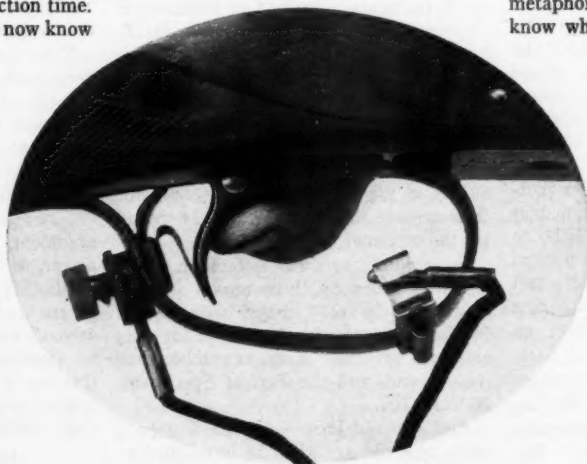
However, Mr. Olin had not had enough experience to appreciate this extraordinary effect of alcohol on the human reaction time—or what the human thinks is the effect, judging by the way he behaves. He was merely work-

Along this line of experiment it is interesting to observe from the experience of many shooters, including the writer, that alcohol, being a narcotic, does under some conditions improve one's shooting. The nervous, jumpy, fudging, fighting, and strained offhand shooter in a hot match, ready to snatch himself a three on any old provocation or none whatever, is often calmed down, warmed up in that clammy

game—offhand, of course—at 200 yards.

In theory, the same narcotic effect should be fatal for the game requiring instant reaction like Skeet or traps, because you can't hold a Skeet or trap-gun and keep squeezing until the kluck goes off, as you can offhand. But in spite of theory, I have known trapshooters who were at their best when somewhat drunker than seven hundred dollars—if that ancient metaphor means anything to you. I don't know whether this was merely a state of normalcy or just what, but the fact remains.

To your mind, if you are an old-timer and familiar with the rifle game in its pre-war years—pre-Spanish and pre-



THE TRIGGER OF THE GUN — THE SHOOTER'S GUN PREFERABLY—CLOSES A CIRCUIT WHEN PRESSED

World War, may come that tale of Colonel Harlee of the Marine Corps, one of the most brilliant and independent thinkers in the Services, and under whom I once served as Chief Range Officer

and Assistant Executive at a National Match, where I had a fine chance to watch the workings of that unconventional mind of his. In charge of one Marine National Match team, he evolved the idea that the way to do away with the "buck" of that tough start of the Team Match—offhand at 200, and let his men do justice to their real ability, was to take them all out the night before the Team Match, and ply them wisely but not too well with spiritus frumenti and entertainment until the wee sma' hours. Doing this, reasoned Harlee, no worthy Marine could be lying awake shooting millions of rounds offhand and skirmish, and wondering if the dawn would never come. Also he would be plumb tired out; too tired for the buck, or snatches, or the general collywobbles that afflict the best of men in the take-off of any hot match.

I forget how the idea panned out, but my memory is that the Leathernecks won that year. Of course this is no novelty, but that was back in the years when Marine wins were less chronic.

Be such ideas as they may, I doubt that any narcotic could do other than slow down the physical reactions, and I am sure that scientific test would prove this. Just what the reason is for that astonishing trapshooting performance of some of the brightest lights in the game when rather well organized, tee'd up, plastered, or illuminated, I don't know. The fact is well known in trapshooting circles, if not so well advertised. Evidently the whiskey-makers have not discovered this fertile field for endorsement of their products as having aided such stars as Tom Tank or Hiram Hoistem to win great trapshooting events.

A year or two ago Edwin Pugsley, Vice-President of Winchester, with his scientific sharks evolved a shooter form of the old lab equipment for testing reaction time. This took the form of a clay-bird dummy with an electric bulb in the center. This was placed in the middle of a sign which mentioned Winchester products, and was located on an easel a few feet away. The light could be flashed on by a varlet in the Winchester organization, standing behind the victim so that the latter had no means of knowing when it was going to happen.

Flashing on this light started a chronoscope or chronograph, a very delicate and accurate device. The victim held a shotgun—his own if he preferred—aimed at the target, and waited for the light to flash. The trigger of the gun was hooked up electrically with a circuit which stopped the chronoscope. Hence: shooter standing all ready, gun aimed, trigger-finger on trigger, waiting for light to flash. Light flashes on, shooter presses trigger instantly (see figures for value of "instantly") and stops the time-recording machine which the light started. The

interval between the light flash and the shooter's trigger-finger reaction was his "reaction time," or "lag time" as shooters sometimes call it.

This same lag of course is present in all human activity, from trigger pressing to brake pushing, or jerking the wheel of a motor car, or sounding the horn,—or shooting in that right cross when the eye says the other man has left an opening. It is that astonishing gap from eye signal to actual performance.

Now the Winchester boys tried their trick device on many, many trapshooters. They kept a record of the several hundred by various classifications, such as age, class in trapshooting, experience, sex, and so on. These data cards were then submitted to that psychological shark, Professor W. R. Miles of Yale University Institute of Human Relations, one of the bright chaps who spend all their time trying to find out "why you are that way." He tabulated the results in many different, charming, and astonishing ways, which lie before me through the courtesy of Mr. Pugsley.

Said results contain much joy for the old coot who is considered about through and is looked upon condescendingly by the young punk with the perfect reactions and this and that which have been assigned as some of the beauties of being young by persons who have never really looked into the matter; the findings being as follows:

Jar Number One: The age-group of boys from 10 to 19,—13 of them in all, showed an average reaction speed of .246 second, or practically  $\frac{1}{4}$  second, with the wide variation of from .19 to .35 second.

The age-group 20 to 29 years,—9 of them, showed a mean speed of .203, or  $\frac{1}{5}$  second, with a variation from .19 to .24. This group is the "physical perfection," the prime of life, in the matter of physical make-up.

But a lot of broken-arch, pot-bellied, bald-headed old pelicans ranging from 50 to 54, and practically dead on their feet in the eyes of the kids,—26 of them in all, hung up .206 for their reaction time, with the extremes of .17 and .29 second for the various times recorded. Compare with .246 for the kids 10 to 19, and their wide variation!

More and worse, the age-group 60 to 69,—8 of them, hung up .200 second for their average time, and .18 and .24 second for the extremes.

Four old brothers who tottered in (theoretically) aided by three nurses and the bystanders, 70 to 79 in age, hung up .219 for their average, with .19 and .26 for their extremes of time. Kids, remember, had .246 second, and the Perfect Specimens, 20 to 29, 203.

And one old chap—may he live to a really ripe old age when he is satisfied to

take things easy—just 85 years old showed up, tried the trick gun, and scored .218 second, with and .18 and .25 for extremes of time.

Before we get off the age matter, let's consider it a bit. Take the matter of automobile accidents, in which judgment, horse sense, and reaction time play a huge part. Statistical sharks say that about 50 per cent of them are caused by the kids, approximately half-witted and often less, from 16 to 22 or 23, who drive without any responsibility, imagination, or regard for the rights of others, and who think their alleged skill is able to cope with the most dangerous situation. Rarely is this specimen the one to turn up in the hospital or the morgue, but rather the fellow in the other car or who starts to cross the street. Figures say that if you could eliminate the Punks and Drunks the highways would become not much more dangerous than a battlefield, because you would catch about 66 per cent of the fellows who cause wrecks and hit pedestrians.

Now one of the feeble alibis advanced for these irresponsible kid drivers is that their reactions are so much quicker than those of older persons, and their eyes so much keener, and this and that; so their apparently dangerous driving is really not, because of all these advantages of youth. But the morgues continue to fill up with their victims, just the same.

Take our reaction figures, the most direct test one can give to differentiate the physical advantage—if any—of the young driver over the old one. Certainly eyesight itself is not greatly concerned, because of the ample size of motor cars and pedestrians. So we'll forget the fact that the older chap has often to wear glims to let him see sharply, while the kids of ten do not; although a myopic kid—poor devil—is more handicapped in eyesight than the oldest old man who is merely far-sighted from age. The figures show that the ages from 10 to 19 made the poorest showing of any age group—those sharp-eyed, quick-witted, agile-response kids. They had far the longest reaction time from 10 to 85.

Even those physically-perfect and fully-developed parties from 20 to 29 didn't beat the records of the "60 to 69" shooters. Professor Miles says, justly, that this is due, in part at least, to the greater experience and training of the older men in trigger pressing.

Fine; and admitting this for the sake of argument, then why assume that the kid driver, with his limited experience, is safer in idiotic driving than the older and more experienced driver,—the man who does not drive idiotically, and has experience enough to appreciate the dangers involved. If training let the old boys over 60 beat the trigger reaction records of the chaps in their teens, then why doesn't the same

(Continued on page 31)

# The First All-American College Rifle Team

## Introducing The Golden Bullets



**BLENMAN, W.**  
Senior, U. S. Naval Academy



**BROADHEAD, A. W.**  
Senior, Carnegie Tech.



**DERVAES, A. R.**  
Senior, Carnegie Tech.



**GOTTFRIED, C. J.**  
Senior, U. of Minnesota



**HOOVER, P. L.**  
Junior, Lehigh

**A** FEW months ago the coaches of several college rifle teams suggested that those shooters who had completed outstanding seasons on the indoor range should receive some distinctive award as a symbol of their shooting ability. It was generally agreed that the individuals who could point to a full season of consistently high scores deserved perhaps even more credit than the man who happened to be good enough to win an important match held on a single day. As a result of these suggestions we present the first annual All-American team of college riflemen.

Every one of the ten men who compose this first all-star aggregation is a distinct credit to the shooting game. Each one is a sportsman as well as a shooter, and each one has demonstrated a consistent ability to produce scores of 280 or better over the difficult intercollegiate course which calls for 10 shots in the prone, kneeling, and offhand positions at 50 feet. These ten shooters represent six institutions, with two places each going to Carnegie, Navy, and Minnesota, who placed one-two-three in the national shoulder-to-shoulder matches. The four other marksmen completing the team did their shooting for Lehigh, Maryland, Ohio State, and Washington.

There was so much close competition for the ten golden bullets to be awarded to the all-stars that a second team was named strong enough to shoot on even terms with any other ten small-boresmen in the country. It is unfortunate that only twenty men could be named in these selections, for there are many others who deserved special credit for some outstanding performance during the year. Many of these, however, will be in competition again next year, and may be able to jump to upper ten.

It is interesting to review the records of some of the leading teams in the season which has just been completed, and to note the important part which was played in their success by the various recipients of the golden bullets.

Carnegie Tech, the national cham-

pion for 1936, boasted a group of shooters who were able to produce, week after week, five high scores totalling 1400; and two names, Broadhead and Dervaes, appeared among the top five each time. Broadhead, a senior mechanical engineer, was the team captain and was used as lead-off man for the second consecutive year. During the year he fired 31 scores in competition for an average of 280.3. Dervaes, a chemical engineer, was the team's individual star, with an average of 287.2 in league postal competition. He showed an unusual ability to bear down and get the extra points when the team needed them.

Navy has dominated the college shooters for so long that every team coach considers his season a success if he is able to turn in a victory over the Middies. This year was no exception, for the Navy team was flooded with sharpshooters. Blenman, team captain, was shooting for the third straight year as a regular. The lowest score he fired all season was 277, against Maryland, just a week after he scored 287 against Florida. Kitch, a sophomore, climaxed an impressive season with a record score of 295 x 300 made in a match against Georgetown, with 100 prone, 99 kneeling, and 96 standing. Nicholson, captain of next year's team, was only slightly less brilliant than his two teammates. He ended the league season with three consecutive scores of 290, followed by 281 in the intercollegiate finals.

Minnesota lost three of its best marksmen early in the season because of sickness and ineligibility, but they carried on to capture Big Ten Honors, third place in National rankings, and to win all dual matches except one which they lost to New York University. Sandy Sandager was probably the smallest man shooting in the intercollegiate matches, but his 285 was big enough to lead all individuals. This score was almost exactly the same as his season's average. Although he has been shooting for eight years he is still improving and may be expected to take a permanent place among the nation's shooting stars. Throughout the sea-

(Continued on page 31)



**HUGHES, R.**  
Senior, Ohio State



**KITCH, W. L.**  
Sophomore, U. S. Naval Academy



**LaBEAU, A. A.**  
Junior, U. of Washington



**MEHRING, A. L., JR.**  
Senior, U. of Maryland



**SANDAGER, R. K.**  
Junior, U. of Minnesota



# Reloading for Better Groups

By H. GUY LOVERIN

**H**AVING fired quite a few hundred shots this past summer in testing my new bullet and looking for new methods of loading all bullets so that they would give greater accuracy; and having been very successful in my quest for accuracy, I am passing along to other readers of *THE AMERICAN RIFLEMAN* some of the things I have learned.

The equipment I have used has helped me, and deserves much credit. My 10X Targetspot scope did all that could be expected of it; and my Ideal No. 5 Universal powder measure, though having seen very active service since 1915, still throws charges more uniformly than I can weigh them. To seat bullets of the B. & M. 311168 and Ideal 308403 (Pope) type, I use my old Bond Model B tool, which seems to do a much better job than any other I have used. Modern-Bond Corporation did a fine job in making my new .30-caliber bullet mould exactly as I wished it. This mould casts a bullet measuring about .3125, which, if it were much larger, might be ruined in sizing down to .311.

For decapping and repriming, and resizing and expanding case necks, I use a Belding & Mull Model 28 tool, and I might add that this tool is very greatly improved by mounting it on a block of hard wood  $\frac{1}{2} \times 4 \times 16$  inches, and also fitting a block of wood under the sliding cradle to keep the latter in alignment when in the forward position, I use this tool in a horizontal position, and find it very accurate as well as fast, especially in decapping, as one does not have to give any time or thought to centering the pin in the flash-hole. Resizing and expanding can be done in one operation, but I divide it into two when I wish the best results; although this may not be necessary after one has his cases sorted into two or possibly three separate lots.

Here is something I consider very important, and which I think is overlooked by many: Case necks should be wiped inside as well as outside with an oily cloth before resizing. Use a four-inch square of slightly-oily flannel over a short piece of .22 cleaning rod. Later on, just before charging with powder or right after neck-expanding, the oil should be wiped out of the necks, using dry flannel over the .22 rod.

After reducing all the necks, I set up the tool for expanding. Most cases will require a normal effort here, and these should be kept separate for testing or match shooting. The tight and loose

cases should be put in another lot, to be discarded or used for unimportant shooting. Many tight cases can be made normal by running them over the expander plug several times, but as it would be necessary to do this every time they were reloaded, it is best to keep such cases separate from the normal ones. In the final operation of bullet-seating it is well to set aside for use as warming shots those cartridges the bullets of which seat hard or easy, using the normal ones for testing or match-shooting. Even with selected cases I find that about one cartridge in twenty has to be consigned to the "warming" lot.

Another important point is to use neck dies, expanders, and bullets of correct size. I have worked on the principle that one should use the largest diameter bullet possible (providing that it is accurate when sized large). This calls for reducing case necks very little, which in turn helps the bullet to lie in perfect alignment with the bore. All these little things work together to help us duplicate the conditions existing in muzzle-loading rifles; and we have the advantage of fixed ammunition.

Most of my cases are F. A. 22 R, these being of good quality brass and fairly thick. I find a neck die measuring .334" is small enough when one uses an expander that measures .310", although before arriving at this size I had Belding & Mull make me dies measuring .332" and .333". I find use for all three sizes now, with thinner brass or .3095" bullets. I have a .311" expander but use mostly a .310". This latter size gives just the right bullet-pull, provided necks have not been reduced too much. I do not believe in bullets seating too tightly.

I have a die for my bullet sizer-and-lubricator which mikes .3152", and I have found this size best for my Bond M311910 bullet, this particular bullet working well when the barrel does all the sizing, down to .308". In designing the bullet I made provision for the metal which is pushed back as the bullet enters the barrel. The front end of the bullet rides on the lands. The same features of this bullet also make it very easy to load without shaving off metal; the bullet loading so easily, in fact, that I need use only the seating plunger in the B. & M. tool, without the chamber. I assemble all my Hornet loads in this way, too.

I wipe the bases of all bullets very clean, and on loaded cartridges I also wipe the points of the bullets clean and

shiny, believing that this aids accuracy by giving more uniform air resistance.

I regret that all my firing had to be done at a range of only 584 feet, but this was all that was available to me. All firing was done with sandbag muzzle rest, without sling. I use a very straight position, which largely eliminates body movement, especially when one's heart begins pounding like a sledge hammer at the sight of bullets all going into a 2-inch group.

My rifles are a regular Springfield Sporter and a Winchester 54 Hornet. A heavy-barrelled rifle would show much better results: it could at least be held more steadily, and the fall of the striker would not disturb the aim to such an extent.

The groups I have made are a credit to any rifle using fixed ammunition. I have a few ten-shot groups 2 inches or less from center to center, and a few more with verticals of 2 inches or less which show the effect of body sway. My best groups are made with the Pope bullet—Ideal 308403—and 13 grains of No. 80; but close behind this load is my Bond 311910 with 12 grains of No. 80. This latter bullet has never given me a 2-inch group, but it has made groups with  $1\frac{3}{4}$ -inch verticals.

A very large number of my groups have half or more of the shots inside of 2 inches. This applies to the Pope bullet and my 311910 bullet in .30-'06 caliber, and to my 225438 Hornet bullet with 4.4 grains of No. 80; and to groups of 20 and 40 shots.

I elevate the muzzle of my .30-'06 before each shot, but if this is done with the 4.4-grain charge of No. 80 in the Hornet it will spatter them all over the lot.

I feel sure that a better shot, with a heavy-barrelled rifle like the new 54 Winchester, could put nearly all of his shots into a 2-inch group at 200 yards if the above methods were employed in preparing the ammunition. Primer pockets should be cleaned at least once in every three shots in order to get more even primer-seating. I have to clean them for every shot in the Hornet.

I do not use oil on the inside of the necks of Hornet cases, and it is not necessary on the .30-'06 after one has sorted over his cases. This speeds up the operation considerably; but after all, is it necessary to use speed in loading one's match ammunition? Make haste slowly and carefully, and the groups will grow smaller in return.

# The All-Around Rifle

By O. A. WAGNER

IN LOOKING over some back numbers of "Outdoor Life" I came across an article in the October 1926 issue entitled "The .32-20 and Others," by C. H. MacVey, and that article is the inspiration of this present outburst. The burden of Mr. MacVey's article is the "All-Around Rifle," for which he puts forward as his candidate the old .32-20. The article is well written and has the endorsement of the Editor of the Gun Department. It is well worth turning back to and reading again.

Mr. MacVey cites the killing-power of Daniel Boone's muzzle-loader and similar rifles of that day as evidence in support of his arguments. But comparison of a round ball such as Boone's rifle shot, with a conical bullet of the same weight, is not rational unless we take into consideration the comparative shocking-power of the two at the same velocity.

A round ball of the same weight as a conical bullet will of course always be of larger diameter, and will be "blunter"; hence, when striking with the same velocity as a conical bullet of the same weight it will have greater tearing, shocking, and killing power. But the round bullet is good only at shorter ranges, because its air resistance is out of all proportion to its weight as compared with the air resistance of a conical bullet. Hence it quickly loses its velocity and striking energy. The very thing that contributes to its great killing-power at short range also limits its usefulness to this same short range. If game were never shot at ranges greater than one hundred yards, no doubt the round ball would be the best killer and the best hunting bullet.

But to get back to the matter of the all-around rifle, I have a candidate to present for consideration. It is none other than our old friend, the .32-40. Now, I know the .32-40 is obsolete, and all that, and not to be considered at all; however, Daniel Boone's rifle, if reconditioned, would kill game as well as ever, and so will the .32-40—and then some. In comparison with the .32-20, the .32-40 will do all that the .32-20 will, and much more, although it has the same general characteristics of the .32-20, in that the recoil is not great and the gun need not weigh a great deal unless weight is actually desired.

No rifle can

really be an all-around rifle except in the hands of the hand-loader. And, be it noted here, Daniel Boone was an expert hand-loader. Factory ammunition was not of his day. The .32-40 with smokeless-steel barrel will accurately shoot various loads from a round ball of about 50 grains weight on up to the modern .32-40 high-power load which is equal in power to the regular .30-30 cartridge.

A very nice reduced load for the .32-40 is a hand-cast bullet of about 110 grains weight, and 20 grains of black powder or its equivalent in smokeless. This load is practically the same as the old .32-20, and will do all that that cartridge will. And I believe it is equally accurate. In fact I do more accurate shooting with it than with the regular .32-40 load, though of course the .32-40-165 would be the better deer load, and in fact was at one time considered the ideal deer load. It is still as good as it ever was; for, though styles and fads have changed, the deer have not.

I have used my .32-40 Marlin rifle a good deal with round balls and about 10 grains bulk of duPont Shotgun Smokeless, on small stuff like English sparrows, ground squirrels, etc., and also on cotton-tails and some jacks. In making up this load I cut 2-inch squares of newspaper, which I crumple up into wads and place in the shells on top of the powder, after shaking the powder down to prevent crushing. Then, with a quarter-inch rod and a six-ounce hammer, I tap the wads down well to make the light powder charge burn quickly and cleanly, and give uniform velocities. This is a very light load, and not good beyond 50 yards. A very quick-burning powder is necessary for this load because of the large powder-space. The bullet is seated in the mouth of the shell. This load is fine for killing trapped animals and butcher stock on the farm, as too much shocking-power causes animals not to bleed well. The old men always

loaded their muzzle-loader squirrel rifles very light at butchering time on this account.

This duPont Shotgun Smokeless in charges of about 16 or 18 grains bulk is fine also for use with the 110-grain bullets, shooting tests indicating the exact charge for the individual rifle. This is a good powder for reduced loads in black-powder cartridges, although the duPont Company does not recommend its use in rifles, and when we do use it we should also use plenty of common sense; then it will be perfectly safe and satisfactory.

In summing-up the many loads that are satisfactory in the .32-40 rifle, with smokeless-steel barrel, I shall mention only five. First, the .32-10-50 gallery load already described, with velocity probably not over 1,000 f.-s. Second, the .32-20-100 load, also described, velocity about 1225 f.-s. and energy about 380 ft.-lbs. Third, the regular .32-40-165 load, velocity 1427 f.-s., energy 747 ft.-lbs. Fourth, the .32-40 high-velocity load, velocity 1752 f.-s., energy 1124 ft.-lbs. Fifth, the .32-40 high-power load, velocity 2070 f.-s., energy 1560 ft.-lbs. Concerning the accuracy of this high-power load, the Marlin Company says: "We have had no difficulty in keeping ten shots in a 2-inch circle at 100 yards, or in a 4-inch circle at 200 yards, using an ordinary Marlin hunting repeater." I should consider this accuracy sufficient for hunting purposes.

With the above-described loads the .32-40 rifle can be made to take the place of anything from the .22 short to the .30-30 for hunting purposes, while many other loads can be used for target work and special individual requirements and fancies. And perhaps some day they will bring out a high-speed load which will extend the use of the .32-40 still further. Mattern, in "Handloading Ammunition," says of the .32-40: "The 16-inch twist permits use of a much softer alloy at velocities of 1600 to 1750 f.-s., and higher

with gas-check bullets, than 10-inch twist rifles can use, while at velocities of 1300 to 1400 f.-s. almost pure lead can be used with smokeless powder." It is therefore evident that the .32-40 cartridge offers the widest range of loads in the all-around rifle class.





BILL TOOK HIS FAVORITE SITTING POSITION ATOP A LARGE ROCK

## Charcoal and Pig Lead

By L. J. HATHAWAY

**M**Y INTEREST in the Sharps rifle goes back to the days of boarding school, years ago. My closest friend there was a chap named Miller who had come from a cattle ranch in Nebraska. He had always lived on a ranch and associated with cattlemen, and he had an unusual practical knowledge of rifles for one of his years. A sportsman father had initiated me into the use of firearms at any early age, and I thought I knew a little something—until I met Miller. Then I decided I had better talk little and listen much.

Soon after becoming established in school, Miller unearthed in the library there some back numbers of old *Recreation* magazine, and dug into all the gun articles. Sharps rifles were still being used for hunting, and mention of them was not infrequent; and coming upon a picture of a Sharps one day, Miller said: "Larry, that's the best action that was ever put on a rifle," and proceeded to explain why, and to recount the cattlemen's praises of "Old Reliable." From then on the name Sharps meant something to me; and when, some years later, I came into possession of the Sharps rifle that had belonged to my grandfather, I was more than pleased. And though most of my rifles have been modern ones, the passing years have seen a few more Sharps line up beside that first one.

The latest addition to the Sharps family is a little .50-70 military carbine, which hangs in a scabbard

above a .45-70 Sharps hunting rifle. Both are in practically factory-perfect condition. The little .50-70 was in the nature of a surprise to me. I ran across it in a pawn shop last fall, but a considerable portion of the bore appeared to be covered with deep, heavy rust, and the caliber did not particularly interest me. The price was not high, however, and I considered buying the little rifle so as to have some extra parts on hand, but found that not all the parts would interchange with those of later Sharps rifles. Finally I bought it with the intention of having it relined and

converted into a Hornet or .22-3000, but when I got it home and pushed a rag through that rust-ruined barrel—lo and behold, there was a perfect bore! The "rust" was simply heavy grease, and I had a factory-perfect specimen, the rifle apparently never having been fired.

I have a weakness for a perfect barrel, especially in the large-caliber black-powder rifles, and the idea of relining the little .50-70 vanished immediately. Instead I began to take a mild interest in the .50-70 cartridge, with a growing conviction that with loading tools and some empty cases

I could get my money's worth of fun out of that rifle just as it was.

At least one manufacturer lists .50-70 ammunition; also Bannerman lists it, and they wrote me that though their stuff was old, all reports concerning it had been favorable. It was cheap, and should at least yield some reloadable empty cases, so I ordered one hundred



**BREATHING "DAMP" THROUGH THE BORE HELPED TO PREVENT POWDER CAKING. IT LOOKS DANGEROUS, BUT YOU'LL NOTE THAT THE BREECH IS OPEN**

rounds. When it arrived we were having bad weather, so I stored it away, and the rifle continued to hang in its scabbard on the wall, in the select company of three other Sharps.

And then, at last, a day dawned bright and warm, and I knew I would have to spend it with



Bill Humphrey. Bill lives on a small farm near Round Hill, Virginia, about fifty miles from Washington, and he worships the grooved barrel with pious zeal. He has an unusual knowledge of rifles and handguns, as well as outdoor things generally, and is the best amateur gun stocker I have ever known. I took the little .50-70 up to Bill's with me, along with some of the Bannerman ammunition.

Now Bill had seen this rifle before, and knew all about it, but the little gun with the big bore fascinated him, and after pawing over it a bit he was all for trying it out. On his farm is one field which he rather reserves for shooting, and along one of the fence-rows is an old ailanthus tree that is specially reserved for a target support and backstop. Back of this is a low stone fence, and with a fair rise of ground beyond, it is quite a safe place to shoot if shots are kept low. The range, from the firing point Bill ordinarily uses, measures about 70 yards, though 100 yards or more can be had. We had decided to shoot from the sitting position, and chose the 70-yard firing point as being best for this.

We carried the rifle, ammunition, and shooting kit down to the firing point, and then continued on with the targets to the tree. Bill uses thumb tacks to fasten up his targets, and soon had a target in place ready for business. The day was bright and clear, and the target stood out well, though there was a quartering wind blowing in from about two o'clock, fairly strong and inclined to be gusty.

Back at the firing point we looked the rifle over once more, and then got down to business. Bill opened a box of cannon fodder, while I dug

#### THE LITTLE GUN WITH THE BIG BORE FASCINATED BILL

out of the kit a can of special high-grade heavy grease with which to smear the lead bullets of the ancient black-powder ammunition. One of the .50-70 bullets was duly treated and the cartridge loaded into the rifle.

We had expected recoil from this cartridge in a 7 $\frac{3}{4}$ -pound gun, and

#### IT IS QUITE A SAFE PLACE TO SHOOT

we were not disappointed. With a ten-inch streak of flame at the muzzle, and a roar that set the echoes rolling, the carbine reared and came back like the thoroughbred it was. The 450-grain slug struck the tree with a vicious *whop*; a cloud of black smoke drifted down the wind.

We fired more shots. It fascinated us. We felt as if we had turned the clock back and were living in another day. It was the largest-bore rifle either of us had ever fired. Then we turned it loose on the flat side of a large rock at about 60 yards. We were glad we were behind the gun. The bullet made a smear nearly as large as a teacup; the impact seemed almost to make the earth tremble. "That thing would *kill* a man," said Bill Humphrey.

We had hoped to shoot some groups and



get a rough idea as to accuracy, but finally gave this up for that day. For one thing, the rifle was shooting two feet high at 70 yards, and we had to hold on the ground in front of the target in order to keep the shots safely low. We might have placed a stone out there for an aiming point, but no real accuracy could be had with the crude sights on the gun and that 8 or 10-pound trigger pull, in addition to no sling to steady the

hold. However, from various indications we strongly suspected that the ammunition was performing considerably better than we had expected.

Holding a post mortem over the ailanthus tree back of the target, we decided that a deer hit anywhere in the body with that 450-grain .50-caliber slug would not travel far; and that any woodchuck that attempted to stop such a bullet would not be long for this earth. The paper ballistics may not be impressive, but the appearance of that tree trunk was. "Would you take on an Alaskan Brownie with that thing?" I asked Bill. "Any time," said he. "And what a perfect rifle that would be for deer in the woods!" And then it was time for lunch.

After lunch Humphrey hauled out a big 12-pound .45-70 Sharps plains rifle which he had bought last year and had never shot, and began to lament the lack of fodder for it. Then suddenly he recalled that somewhere in the house was an ancient box of the stuff, and began a search for it. Eventually he found it, and back to the range we went.

This .45-70 stuff had every appearance of being really old—considerably older, in fact, than the .50-70 Bannerman ammunition. However, there was plenty of grease still in the can, and we hoped that the primers were not too bad.

I carefully greased a bullet and dropped the cartridge into the rifle, and Bill took his favorite, though unorthodox, sitting position atop a large rock, and settled down to business. The heavy barrel swayed a bit and then settled down, as Bill put pressure on the trigger. I

(Continued on page 32)



THE AUTHOR SHOOTING  
SQUIRRELS WITH RE-  
DUCED LOADS IN THE .270

## Cast Bullets for the .270 Winchester

By BYRON E. COTTRELL

THE .270 Winchester has been with us for more than ten years, and still the best cast bullet for this fine rifle has not yet appeared. The first year this rifle was in use Belding & Mull brought out three bullet moulds for it, and Ideal two. The B. & M. moulds were for a pointed plain-base 111-grain bullet, a blunt-nosed plain-base bullet weighing 125 grains, and a blunt-pointed gas-check bullet of 136 grains weight. The two Ideal moulds (made by Lyman) were both for 138-grain bullets: a pointed plain-base, and a round-nose gas-check.

After ten years of reloading for this caliber there is only one of these bullets that is ever mentioned in connection with very accurate cast-bullet loads, and that is the B. & M. 111-grain. If you were to ask Loverin what was the most accurate cast bullet he made for the .270 Winchester, I am sure he would tell you it was his 111-grain plain-base. Or ask that fine rifleman and reloader, H. A. Donaldson, what is the most accurate cast bullet he has ever used in the .270, and he will tell you the same thing.

Now with other things equal, the gas-check bullet is always more accurate than the plain-base. There is every reason why it should be, and yet the 138-grain Ideal

bullet and the 136-grain B. & M. bullet—both gas-check—will not shoot as good groups, with any powder charges that I have ever tried, as will the 111-grain B. & M. plain-base bullet.

Why are not the gas-check bullets more accurate in the .270? It is simply because the gas-check bullets for the .270 are too heavy for the rifle. They do not keyhole, even at the lowest possible velocities, but they do not have the correct balance that makes for the finest accuracy. Do not misunderstand me: all these bullets are accurate, but they are not as accurate as they should be.

Mr. H. A. Donaldson writes me that he can get 1-inch 50-yard groups with the Loverin 111-grain bullet carefully loaded ahead of 10 grains of No. 80.

Now I believe that if we had a 100 to 110-grain gas-check bullet we could get  $\frac{3}{4}$ -inch groups at 50 yards right along. Also we would be getting a bit more velocity, and this would make a better 100-yard load, or even 200-yard one; although 100 yards is as great a range as I am interested in with a cast-bullet load.

For ten years we have had no new .270 bullet moulds. Five were brought out as soon as the rifle came out, and now all but

one are practically forgotten—or should be! These five were all guesses, more or less. Bore diameter was the only known factor in connection with cast .270 bullets. The 111-grain bullet was designed as a light bullet for killing small game, and it just happened to be the most accurate. Ideal believed the 138-grain weight would be the most accurate, or they would not have designed both their pointed small-game bullets, as well as their gas-check bullet, in this weight. It was mostly a guess, and the guess was wrong.

Now that we have acquired plenty of knowledge and experience, why not let us have a new bullet designed around known facts? I would suggest that such a bullet have a rather short sharp point—an ogive of around three diameters—to give a good long bearing in the barrel, one or two lubricating grooves, and a long gas-check seat to carry lubricant ahead of the gas-check cup, as with the .30-caliber Squibb bullet. Bullet length should be about .800 inch. Or the bullet could be made with a semi-pointed or round nose, and about .750 inch in length. It should have a gas check.

Who will be the first to bring out such a bullet?



# The Blake Bolt-Action Magazine Rifle

By ELMER KEITH

**F**EW riflemen today ever used or saw a Blake bolt-action spool-magazine rifle, hence a description may be of interest. Blake rifles were made in single-shot, lever-action, and bolt-action types, and in military and sporting models. Not very many were ever made, and they are scarce now. The specimen I have is the only one I have ever seen in more than twenty years of experimenting with every type of gun I could get my hands on.

This is a beautiful bolt-action sporting model, with two-piece stock and detachable spool-type 7-shot magazine. In spite of the capacity of the magazine, this portion of the rifle has much trimmer and more symmetrical lines than that of the famous old Krag. The magazine cover is hinged at one side and has a spring catch on the other; and when swung open it exposes the whole magazine compartment and the hands that turn and lock the magazine spool. The operation of this magazine is very much like that of the Mannlicher-Schoenauer and Model 99 Savage rifles, and it is smooth and absolutely reliable. It requires but a few seconds to remove an empty magazine and insert a loaded one, though care must be used to push the loaded magazine into the correct position, where it locks. Ejection is from the top, as with the Krag and Springfield.

My rifle has a pistol grip, and both grip and fore-end are finely hand-checked. The stock is well figured, and has

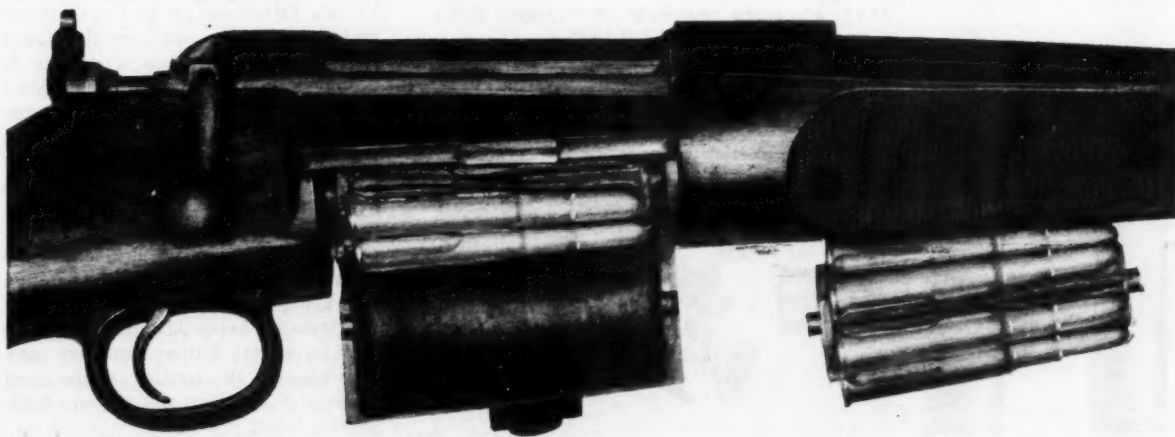
a buttplate similar to that of the old Remington rolling-block and Hepburn rifles. A lever on the left side of the receiver operates the magazine cut-off, so that the rifle can be used as a single-loader while retaining a full magazine for an emergency. The round barrel is 27 inches long, and is well tapered from the heavy breech to the muzzle. The rifle balances well and handles well, though the shape of the stock is not in accordance with modern design. On the left side of the receiver are engraved the words "Made for C. V. Kerr," while on the magazine floor plate is engraved a bull elk, with the words "Blake, Pat. July 26th, '98." On the guard tang is the serial number 132. Altogether the rifle is a strong and well-made rifle, and I should say that in many respects it was made before its time.

The rifle has a very good peep sight on the bolt head or cocking piece, and no barrel slot. The bolt is polished bright, while all other metal parts are well blued. The magazine cover hinge projects slightly on the left side of the receiver, while the catch projects somewhat on the right side, though not nearly as much as on the Krag; it being altogether a much neater-looking magazine arrangement than that of the Krag.

This rifle of mine is .30-40 caliber, the chamber being throated for the old-style 220-grain bullet; and from some group-shooting at 200 yards and some wood-

chuck shooting, I have formed the opinion that this rifle is just as accurate as any Krag sporter, in spite of its two-piece stock. The barrel is rifled with four grooves, the grooves and lands being of equal width, which makes the lands appear wider than in most barrels. The twist is right hand, and I should say about one turn in 10 inches. The shape and location of the bolt handle are particularly adapted to rapid fire. With the addition of a Whelen detachable sling, and a pouch for carrying two or three extra loaded magazines, it would be a fine hunting rifle, using a very reliable cartridge. I used Remington and Western 220-grain ammunition, and both made 6-inch groups at 200 yards prone with an improvised sling.

I have six magazines for this rifle. They are simple in construction, and any good tinsmith could make duplicates of them in a short time. I have wondered if the Government ever tested out this rifle, and if so, why it was not adopted. Probably because of the bulky form of the magazine, and the fact that with the loss of the magazine the rifle would become a single-shot. The Krag magazine is built into the rifle, and is a much more rugged mechanism. Nevertheless, the old Blake rifle is a very interesting and useful hunting arm. Shiff the Gunman says, "They cost \$67.00 wholesale when they were brought out, and retailed at \$90.00."





# The Last Word in German Bullets

By FRANTZ ROSENBERG

**I**T IS a well-known fact that it is entirely possible to construct a hunting-rifle projectile that will give best results under certain specified conditions of velocity and resistance in animal tissue; however, as soon as these conditions are altered it is a different story.

We are familiar with the failure of the easily-expanding bullets designed for low velocities, when these are driven at much above 2400 foot-seconds; and we also know of the failure of bullets of the tough "delayed-expansion" type when the velocity is lowered or the resistance in animal tissue is lessened.

Many attempts have been made to construct high-velocity sporting bullets that would prove effective under all the varied conditions of velocity and range, and against both "soft" game and big game of heavy resistance. Some years ago, when they first appeared, I gave an account in these pages of the German "Starkmantelgeschosse" (which I translated as "reinforced base") bullets constructed by the great German ammunition concern, Berlin Karlsruher Industrie-Werke, in 7-mm., 8-mm., and 9.3-mm. caliber, suitable for modern high-velocity cartridges.

The idea was a metal jacket of great toughness and heavier than usual, and increasing in thickness towards the base, which was practically of solid metal. On the other hand, the nose was made easily-expanding and with three different forms of point: a large soft lead point for cartridges of moderate velocity; a small

"open point," and a sharp aluminum-capped point for high velocity. The bullets were boat-tailed, and were jacketed with an alloy similar to Lubaloy or gilding metal.

These bullets have now been tried out on all kinds of big game throughout the world, and have given great satisfaction, in nearly all cases making terrific wounds with deep penetration; and in most cases where the bullet itself disintegrated, the solid base went right through the animal, giving a good blood trail. They were really a further development of the now famous Western Cartridge Company's 220-grain .30-caliber bullet with pin-point lead nose, which has been my own favorite bullet for many years, and with which I have killed a considerable number of moose. Only once have I lost a bull because of this bullet not expanding sufficiently, and going through the animal without stopping it. That was in 1932. This last fall I had the good fortune to drop three bull moose with one such 220-grain Western bullet apiece, and in one of the bulls I recognized my friend of 1932, by the curious shape of the antlers. When I cut him open I found the old wound from the 220-grain bullet, which had gone right through the body, too high and a little too far back, yet breaking the ribs on both sides. The ribs were now nicely knitted, and the bull was fat and in fine condition. The antlers were extremely heavy for a Scandinavian moose.

With a bullet especially constructed for deep penetration in heavy animals this must happen now and then, and I still consider this Western bullet ideal for moose hunting here in Norway, with a velocity

around 2400 foot-seconds and fired from a double-barreled rifle; and I much prefer it to the 9.3-mm. or the .375 Magnum Holland & Holland. I should never rely upon it for long-range work, however, where the velocity dropped much below 2000 foot-seconds.

Some years ago another big German ammunition factory, the Rheinisch Westfälischen Sprengstoff A. G., of Nuremberg, brought out a new form of sporting bullet which they called their "H Mantelgeschoss" and which had much the same characteristics as the above-mentioned "Starkmantelgeschosse."

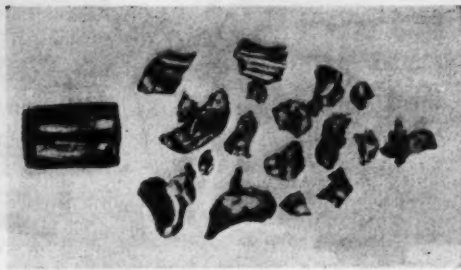
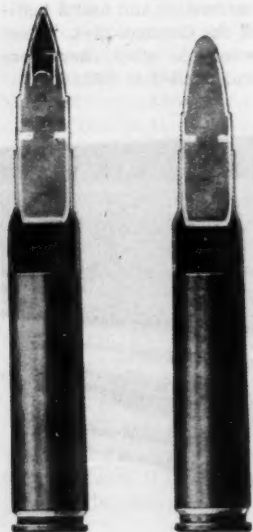
This new bullet is a modern pointed boat-tail with a nicked soft-steel jacket, and either a soft lead nose or a hollow capped point. The steel jacket is folded or buckled up on the inside at about the middle of the bullet's length, forming a kind of partition. The point upsets easily in the softest animal tissue, while the rear part or base continues on through the animal as a separate bullet. These bullets have a very satisfactory form and are propelled by the most modern progressive-burning nitrocellulose powders, the cartridges employing them showing extremely good ballistics and most excellent accuracy.

The latest addition to these bullets is the so-called "Sharfrand" or "sharp-rim," as shown in the illustration. This is a feature taken from the old black-powder and hard-lead German sporting ammunition, as it was found to make a more clean-cut entrance hole, and give a better blood trail. These new bullets are to be had in sporting cartridges with rustless primers and nitrocellulose powders, in 7-mm. (173-grain), 8-mm. (195-grain, and 186-grain for the 8 x 60 Magnum), and 9.3-mm. (260-grain), in both rimmed and rimless cases. The bullets are also loaded in Mannlicher-Schoenauer cartridges in 6.5-mm. (160-grain), 8-mm. (186-grain), and 9-mm. (230-grain), but for these cartridges the bullets are only open-point, without the sharp rim.

I have seen groups fired with these bullets in the various 8-mm. and 9.3-mm. cartridges that show remarkable accuracy. I have also seen detailed reports from experienced big-game hunters on their killing power on big game of all varieties, including heavy African game, which seem to indicate that we here have come very close to the solution of the great problem of an all-around effective high-velocity bullet.

LEFT: 8 x 60-MM. MAGNUM CARTRIDGES WITH NEW-TYPE BULLETS

BELOW: THE WAY THE BULLET PERFORMS IN ANIMAL TISSUE. THE FORWARD PORTION BROKE UP, WHILE THE REAR PORTION HELD TOGETHER



# Concerning the Use of Wads

By SEELEY A. WALLEN,  
1st Lt. U. S. A., Ret.

**R**EFERRING to Mr. Donaldson's valuable article in the March RIFLEMAN on the preparation and use of lubricated wads, the results of some experiments that I have made along similar lines may be of interest.

Experiments made prior to and during the last deer season in this state with a system like the one Mr. Donaldson describes on page 24 as an old method caused me to conclude that the presence of a graphited oil in the bore during zero weather was decidedly undesirable from the standpoint of accuracy, and to suspect that it might even be dangerous if the loads used were maximum for the rifle. On a careful re-check of these notes, I consider that the experiments were not sufficiently extended to constitute proof, but they were highly suggestive. No doubt some one of the RIFLEMAN family is in a position to state positively what the facts are in this case. Certainly most riflemen do not do much outdoor work in zero or sub-zero weather, but performance facts related to such temperature would be useful to Pennsylvania deer hunters.

For the few riflemen who load and reload cases that are straight, or nearly so, inside, and who use charges of powder that do not fill the case, seating a cardboard wad of about .025 inch thickness firmly (but without crushing pressure) on the powder insures much greater accuracy than can be obtained with the powder loose in the case. Certainly unless the loaded rifle is held, uniformly, muzzle-up or muzzle-down, and tapped, prior to each shot.

The use of considerably heavier dry cardboard wads will not be found to produce the results that might logically be expected in all cases. Unquestionably, lowered velocity and increased breech pressure could reasonably be anticipated in any instance, and I don't doubt that both factors would appear with some loads. However, a whole series of careful tests has shown conclusively that the same velocity with slightly decreased breech pressure is obtained by using two cardboard wads of a total thickness of .109 inch, with five per cent less powder when using certain No. 80 loads in the .28-30. Using equal powder charges with the heavier wads would undoubtedly increase the breech pressure—probably to an unsafe degree with the loads in question. The wads used weigh about 1.4 grains, and the increase in velocity would hardly appear to be due to gas checking, the cast bullets used being at least .002

inch above maximum groove diameter.

These tests were made in the hope of securing improved accuracy, but the actual improvement was so slight that the practice was abandoned as an unwarrantable inconvenience. Some use might be found for the expedient as a substitute for gas checks where the load used was hot enough to call for the latter.

Subsequently a considerable series of experiments were made with the same rifle and heavy loads of No. 80 to determine the effect of using an .027 inch dry wad on the powder and an .067 inch wad soaked in hot tallow (also in hot tallow and paraffine) at the base of the bullet. Object: to avoid progressive fouling of the bore, which had built up heavy pressures after the first five or ten shots with these loads and the rather soft cast bullets used. For this purpose the idea proved entirely successful. This wad, lubricated, weighed 1.6 grain; dry, .8 grain. In other respects it did not prove satisfactory. In some loads the breech pressures were noticeably (though not dangerously) increased, and, in every case, muzzle velocity was sufficiently decreased to show a higher trajectory by from 1 to 2 inches in shooting to 200 yards. Accuracy was of course greatly improved by—or with—this securing of uniform breech pressures.

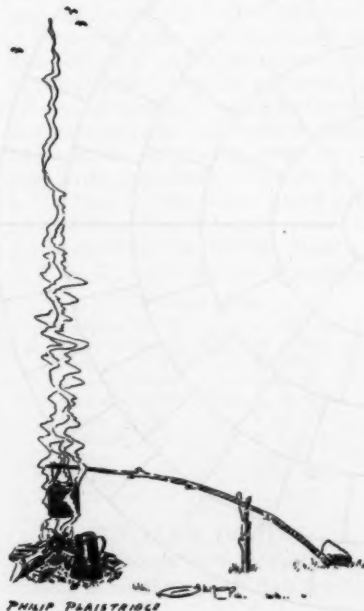
The same wadding, substituting the lubricated .067 inch wad for the .28-30

gas check—weight 4 grains—ahead of a decidedly full D1204 load, gave results very similar to those of the gas-check load, but there were no indications that the lubricated wad shot cleaner than the gas checks. Considerable use of an .042 inch lubricated cardboard wad, as above, in addition to the gas check, on such D1204 loads has failed to show any measurable differences in breech pressure\* or muzzle velocity compared to identical loads without it. The loads using it deliver slightly better groups as to accuracy, but the improvement is barely noticeable.

Mr. Donaldson's present method seems certain to be the one best adapted to the purpose of preventing erosion from hot loads, but whether it is the plan most likely to obviate fouling in shooting cast bullets at the highest speeds and in the softest tempers practicable, I do not know. Nor do I know whether any procedure which resulted in graphited lubricant being left in the bore would be desirable in extremely cold weather.

The method used in determining approximate breech pressures in the tests I made will show a difference of less than two per cent with reasonably full charges of powder such as those used, but I have never seen it described. Cases are sorted closely as to make and number of times fired, miked  $\frac{1}{4}$  inch below rim, and separated into lots of the same diameter within .0005 inch. The average expansion of ten or more on firing will show definitely what load was used. Bad fouling in the bore shows up in case expansion, as well as in inaccuracy, of course. While rather a nuisance, classifying cases in this way results in very definite increase in accuracy in addition to permitting determination of breech pressure as compared with other loads in the same rifle. I do not believe this would work so well in extra light chambers. Where there is from .002 inch to .004 inch tolerance at the point measured, and a reasonably full load is used, average expansion for the same load will not usually show as much as .0001 inch variation, considering of course case lots of the same original size and quality. Naturally, smaller lots will expand more, though not up to the average after-firing size of larger ones. Comparative muzzle velocities were obtained (or closely approximated) by careful and extended rest shooting for trajectory to 200 and 300 yards.

\* I.e., several direct comparative tests in two rifles failed to show as much as .0001-inch difference in average case expansion.



# Evaluating Shot Patterns

By H. C. COULTER

IN the January 1936 AMERICAN RIFLEMAN there is an interesting article by Mr. L. S. Foltz regarding shot patterns, and their analysis and evaluation by dividing a 30-inch circle into 100 parts of equal area. I agree with all Mr. Foltz has to say about the desirability of dividing the circle into 100 sectors, but believe the value of a circle so divided will be enhanced if all sectors are as nearly as possible alike in shape, and conform approximately to the outline of objects one ordinarily desires to hit, as shown in the accompanying sketch.

The circle at the center has a radius of  $1\frac{1}{2}$  inches and an area of 7.06858 square inches, or one hundredth of the 30-inch circle. The next circle encompasses the inner circle, and has seven sectors each equal in area to the center circle. Its radius is obtained by the expression:

$$R = \sqrt{\frac{8 \times 7.06858}{\pi}} = 4.244$$

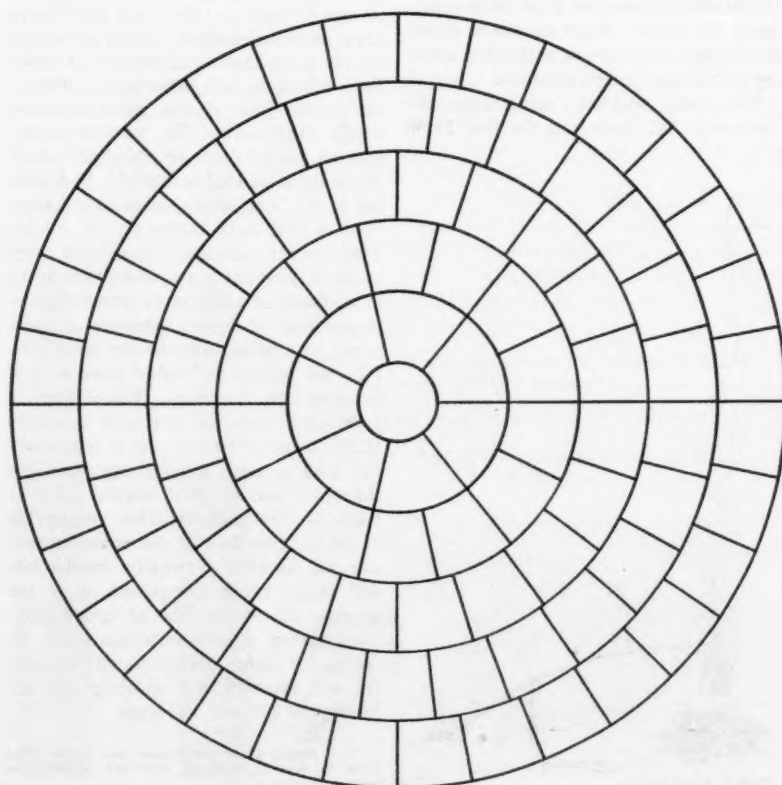
The space between the second and third circles is divided into 14 sectors. Its radius is obtained by the expression:

$$R = \sqrt{\frac{22 \times 7.06858}{\pi}} = 7.03; \text{ and so on.}$$

The complete diagram is made up as follows:

	Radius in Inches	Number of Areas	Degrees between Segments
Inner Circle	1.5	1	—
Second "	4.244	7	51.4286
Third "	7.03	14	25.7143
Fourth "	9.72	20	18.
Fifth "	12.35	26	13.846
Outer "	15.	32	11.25

Those who wish to construct the target with only an ordinary ruler will obtain practical accuracy by using radii of  $1\frac{1}{2}$ ,  $4\frac{1}{4}$ , 7,  $9\frac{3}{4}$ ,  $12\frac{1}{2}$ , and 15 inches, respectively for the circles, and by projecting the radial lines from small discs copied from the illustration.



## TO SHRINK THE GROUP

By WILLARD B. CHAPPEL

FOR ABOUT half a century the writer has been trying with varying degrees of success to get smaller groups. Recently he has found a way to cut down the size of the best group he can possibly shoot on any standard target, and as the same degree of shrinkage may be possible for the rest of you shooters who read this, it is worth your trying.

First, just to see whether the writer is haywire on this idea of his, shoot the smallest group possible on a black bulls-eye and white background, using a flat-top blade front sight of as great width as you can stand. Set this group aside for comparison later.

Now cut an isosceles triangle of white paper, of size to suit the range you intend to use. For 50 yards the base of the triangle should be at least  $1\frac{1}{2}$  inches, and the height about twice that much. Invert this triangle, and paste upon a dead-black background. This is your "bullseye."

Sighting through the rear aperture at this target, it should appear as if the point at the bottom of the triangle were just touching the top of the front sight.

Shoot as many groups on this triangular target as you did on the black bullseye, and select the smallest group. Compare with the other to see if the arrangement works as well for you as it did for me.

## RECESSIONAL

The turmoil and the shooting dies,  
The shooters and the smoke depart;  
Still sound the ancient alibis—  
The rifle didn't do its part.  
The shoulder sore, the swollen jaw,  
Are with us yet; are with us yet!

D. P. TUCKER.

## TWO KINDS OF "KICK"

Editor, AMERICAN RIFLEMAN,  
Dear Sir:

A guncrank friend gave me for Christmas a one-pound canister of pistol powder and a one-pint bottle of Monogram, a Canadian rye whiskey. On the humorous card within the package he had written: "Instructions inside. Read carefully." On the inside he had written:

"The strength of this package to me is a puzzle,  
Both are intended to go in the muzzle;  
So be careful in using, you durned old Hick,  
I imagine that either will give you a kick."

—C. L. K.



# **THE FIRST ALL-AMERICAN COLLEGE RIFLE TEAM** (Continued from page 21)

son he was pressed for honors by Gottfried, a shooter whose other activities kept him off the range except when a match was actually in progress. He fired less than 150 practice rounds all season, but was still able to average more than 280.

New York University completely dominated intercollege shooting in New York and New England with perhaps the most evenly balanced aggregation in the country. There were no brilliant individual stars on the team, and the identity of the high man in each week's match was unknown until the last shot had been fired. Jacobowitz, Metlicka, Buchenholz, Lipsius, and Rappaport were the standbys, but they always had able support from their teammates. They won dual matches with monotonous regularity, most of them in shoulder-to-shoulder competition, and they placed first over twelve other schools in the regional matches at New London. Sgt. Fred Wallace deserves great credit for an excellent job of coaching.

The University of Iowa, second best Big Ten team, was another well-balanced but starless aggregation. Five men had averages better than 270, with Fox leading the team with 277.

The Ohio State team was captained by Bob Hughes, of Youngstown, a veteran outdoor small-bore shooter who has already shot on two Dewar teams. The only blemish on an otherwise excellent record is the 264 fired in the national intercollegiate the morning after Hughes had driven over icy mountain roads until long past midnight. This was more than balanced by a 280 score made on the same range a few weeks earlier, against equally stiff competition.

The University of Washington, located too far from other class teams to engage in shoulder-to-shoulder competition with them, was forced to limit itself to postal matches in which it had a remarkable record, defeating all the teams in the Missouri Valley conference at least twice, and winning the Hearst trophy against all competitors. The team boasted an outstanding star in the person of Arthur La Beau, whose 284.2 league average was six points better than that of Vic Koozin, the high individual in the Hearst match. His extremely high scores mark him as a top-flight star even without additional shoulder-to-shoulder data.

Kansas State ranked as the leading Missouri Valley team largely through the efforts of Stewart and Gaumer, who with Butterworth of Iowa State, were selected at a meeting of the coaches as the best marksmen in that loop. Stewart has an imposing three-year record with the R. O. T. C. as well as with the varsity team, that indicates he is one of the

nation's very best college shooters. Unfortunately this season he fired several matches when he should have been in bed, and he was unable because of illness to complete the team's schedule of matches. Next year he will continue his education as a West Point cadet.

George Washington, Lehigh and Maryland placed fourth, fifth, and sixth in the shoulder-to-shoulder matches, with three very good teams that included a number of real sharpshooters. Hooper, for example, was the anchor man for Lehigh. Delays caused by the slow shooting of his teammates in the nationals left him with less than half the usual time, but even with this pressure he was able to come through with a 283, the second high score of the matches. His year-round record was so brilliant that he completely overshadowed his teammate William Woodring, who is known among the outdoor small-bore clan as a dreaded "money" shooter. The Maryland team included two shooters of nearly equal ability, Mehring and Davis. Mehring, who a few years ago became disgusted and threatened to give up shooting, has a slight edge because of his somewhat higher shoulder-to-shoulder average. Wallace of G. W. attracted the attention of several opposing coaches and he continually posted creditable scores in shoulder-to-shoulder matches.

Cornell had another well-balanced team, with a half dozen or more shooters of nearly equal ability. Fordham, Richman, Serrell, Smith, and Jenkins were all excellent, with the first two the most consistently high members of the team.

West Point also produced a group of shooters who stressed team cooperation and spirit rather than individual brilliance of the team members. Compton, McGoldrick, and McCorkle were the standbys in this, the Army's last year of shooting.

There were many other individuals who deserved some special recognition, such as Wintermoyer of Drexel, who posted one 287 in a shoulder-to-shoulder match; seventeen-year-old Fred Jones of Florida, who was the outstanding college marksman of the deep South; Whitaker of M. I. T.; Couser of the Coast Guard Academy; Ball of Rhode Island; Cross, Edwards, and Waddleton of Yale; Hergert of C. C. N. Y., and Sauerwein of Lafayette.

## **THE SECOND TEAM**

Compton, T. C.	U. S. M. A.
Davis, Raymond, Jr.	U. of Md.
Fordham	Cornell
Gaumer, John F.	Kans. St.
Jacobowitz, E. N.	N. Y. U.
Koozin, Victor	U. of W.
Nicholson, R. P.	U. S. N. A.
Richman	Cornell
Stewart, Wm. F.	Kans. St.
Wallace, D. D.	G. W. U.

## **THE LAPSE OF TIME**

(Continued from page 20)

training in driving cars let their reactions

beat those of the kids at the steering wheel?

So, any way you figure it,—whether in actual quicker reactions by older men, or the advantage of experience, these tests make out a poor case for Willy Whipper-snapper, who goes careening over the highways at the wheel of the delivery wagon for Heinie Dachshund's Meat Emporium. Willy is entitled, by all the ways of figuring the case, to drive more and not less, carefully. His reactions are either slower than those of older drivers by reason of youth, or else his limited experience at the wheel of the auto makes him infallibly slower in reaction than the more experienced driver, with his greater experience in speed and distance judgment.

I think the age-end of these most complete experiments is one of the most interesting phases of the test. Perhaps it is because I am over 50 myself.

To make the matter more conclusive: Age group 20 to 49 years, number of shooters tested 117, showed just .200, or 1/5 second as the mean reaction time. Variation, .14 to .35, pretty wide.

But age group 50 to 85;—55 of them in all, showed .209 second for reaction time, or 9/1000 second difference in favor of the younger men; reaction time extremes, .16 to .31 second. Where is all this quick-reaction stuff for youth, anyhow?

As could be expected, coming now to Class Reaction Time, the higher classes of shooters showed the quickest time of reaction. The AA lads hung up .196 for their time,—28 of them. This for the first "shot" in each case. The A chaps, 43 of them, .201 for their first shot. Each man fired four "shots," and the time for the last one speeded up considerably.

The AA men scored .190 for the last shot of the four. The A men scored .196 instead of .201. The B Class men ran .212 for the first shot, .201 for the last one. The C class men .207 for the first, .201 for the last. Amusing to note the very consistent better time for the better shots. The four classes included practically 200 shooters who took the tests.

The AA men, incidentally, averaged 44 years of age; the A men 43 years; the B men 46 years, the C men 44 years, so age was nearly the same throughout.

The gals, I regret to say, did not carry out those traditions of marvelous reaction and this and that which we use to explain some innocent lady's borrowing a six-shooter and beating heck out of the lad who lent it to her. Just 21 of them took the test. Age column is a total blank, which proves that this great engineer, Edwin Pugsley, failed us in the crucial moment. Even his scientific leanings couldn't get that information for us over his natural fear.

They showed .218 for the mean time, and .16 to .27 for the variation. Not bad, but no better than a lot of old fossils who

don't even look at women any more. Average age, if taken by Mr. Pugsley, from 16 to 23—at least that is all the dope he would have gotten.

All the way through, in case I have not made the matter clear, the average of the first four shots per person was taken. And in general, summing up this and many other experiments conducted in the universities with the light-flash and key-pressing system, the average human reaction time is .200 second or 1/5 second, with very little depending upon the age of the person.

And see what can happen in this 1/5th second:

A 50-mile-per-hour duck—not at all fast compared with the top of the list in duck speedsters—will travel 15 feet. Lead him the right amount for shot-travel time, stop the gun as trigger is pulled,—and miss him 15 feet. This outside of hammer fall, ignition and barrel time.

A running deer at 20 miles an hour will go 6 feet.

A Springfield bullet will go nearly 200 yards.

A charge of shot at ordinary velocity will go 45 yards or more.

A car at 50 miles an hour—like the duck—will go 15 feet. And that means before the driver has even moved his foot, let alone socked down on the brake.

I guess we are not as fast as we think we are.

\* \* \* \* \*

Now translate all this into the situation of the tyro who thinks that he can "fool the rifle" by jerking the trigger as the sight passes the bull. Not only is he 1/5 second late in the matter, but he tenses a set of muscles at the same time that he sends the impulse to the trigger finger. The flinch or tightening comes before that trigger has actually moved, with all the lock speed, ignition time, and barrel time to be added in while the rifle is being jerked by that set of muscles.

That is why they put Santa Fe's, Two's, and movable 4's in the list of things to be marked.

### THE .270 AND COYOTES

(Continued from page 16)

The other, after stopping a .270 bullet with a slender shoulder bone, obligingly turned and absorbed another in the other shoulder; then blithely took off, using his brisket as a sled runner.

As I live in a country where one can carry a rifle every day in the year and find something to use it on without the neighbors giving the matter a second thought, perhaps my experience with the .270 has been considerably more extensive than that of the average hunter, and the results I have obtained can probably be considered typical when the cartridge is used on game up to and including mule deer and goats. Between myself and a half dozen of my

friends who use the .270, I know of about forty head of mule deer and three goats that were killed with this rifle, and not in a single case did the bullet fail to penetrate to the vitals; and they were hit about everywhere from stem to stern. I once shot a small buck such as described in the article mentioned, at about 150 yards, the bullet breaking both shoulders and pieces of the bullet lodging just under the skin on the off side. I have lost but one deer that was hit with the .270, and he got just a flesh wound on the shoulder as he ran quartering away. I saw him once again that day. He was walking with a limp but bearing some weight on the foot, indicating that the bone wasn't broken; and I feel confident that he recovered.

I am not saying that one does not get freak performances occasionally. For example, I once shot a large buck through the ribs at about 80 yards, the bullet going through like an arrow and hardly drawing blood where it emerged, but nevertheless knocking him down. He lay where he was until I was within 15 feet, then jumped up and started off as if unhurt. I brought him down again with a shot through the neck. Nine times out of ten, when a fair hit is made you can walk right over and pick up your buck within less than 50 yards of where you shot at him,—and that's the most that can be said of any deer rifle.

I hope the ammunition companies do not interpret all this about insufficient penetration as popular demand, and begin manufacturing .270 ammunition with heavier bullet jackets. To do so might ruin a perfect deer rifle. As for coyotes, the present 130-grain loads cannot be depended upon to open at distances over 300 yards. If some company would bring out a load with a 100-grain bullet at a muzzle velocity of about 3500 foot-seconds, and the bullet similar to those used in the so-called vermin rifles, it would be a peach of a coyote load and a sure killer on deer at the longer ranges. I am anxious to try out a .220 Swift; it should just about blast a coyote out of his hide at 400 yards.

### CHARCOAL AND PIG LEAD

(Continued from page 25)

watched the muzzle, to observe the flash and recoil. In the excitement, perhaps, of firing the first shot from a new rifle, Bill got a bit tense, and paused to relax and take a few deep breaths; then steadied down again. As I watched, a 4-inch streak of red flame shot from the muzzle, accompanied by a deep, heavy roar, and the solid, almost metallic crack of the bullet as it bit deep into the tree trunk. The difference in the report and the crack of the bullet as compared to the short-barrelled .50-70 were quite noticeable, as was the time of flight of the lead

slug. It sounded very businesslike, and I suspected that it, too, "would kill a man."

After several shots to get the feel of the rifle, Bill set out to see if he couldn't get something resembling a group, even with that ammunition. The rifle was known to have killed buffalo in Montana, and the sights were the same now as then. The trigger pull was right, and the heavy barrel tended to hold steady without a sling.

Carefully I greased a bullet, and handed the cartridge to Bill. He slid it into the big rifle, and with equal care sent it flying through the target and deep into the tree trunk. The dying echoes of one shot were followed by the crash and roar of the next, until all the air seemed full of sound, and black smoke. Five times; and then we went down to look. And, there was a group measuring about 2 inches high and 4 inches wide—with that old ammunition and plain open sights. And I think the 4 inches would have been nearer to 2 had Bill been using a steadier position. The target was badly torn, but the large bullet holes showed plainly in the wood.

Bill is in love with that Sharps rifle now, and is going to put a scope on it; and he may even get loading tools. We both agree that the old big-bore rifles are still interesting, and we find that they satisfy a certain instinct buried down so deep in us that nothing else is ever quite able to reach it.

### A RATHER EARLY CHUCK

(Continued from page 8)

rock, bounced clear, and fell whirling through the air some 75 feet more, landing with a loud crash in the brush,—the most spectacular shot I ever made on a rock chuck.

Then our work began, for the brush was thick. We climbed to the base of the rim, where I set down the rifle and kodak and looked for the chuck. A five-minute search located it, lodged in a bush above the ground. It was a very dead chuck, and a post mortem later showed that the .32-20 hollow-point had struck its throat, broken the shoulder, and cut off the backbone.

I never knew an early February sun to be so hot, nor did I ever sweat so much at that time of the year as I did climbing around below that rim through the brush, carrying a 10-pound rifle, a bulky kodak, and a big chuck, for the next half-hour till we got out on top again.

"All that trouble for one chuck," you ask? But this wasn't a real hunt—I just wanted to prove that chucks stay out in Idaho when they come out. And I have some pictures, and a pleasant memory of a trip on which I shot the earliest rock chuck I have ever killed. I carried the chuck home to show that I had killed it, and the Persians demonstrated that it was fresh meat and good to eat!

# Massachusetts Organizes Legislative Association

**M**ASSACHUSETTS sportsmen and target shooters are confronted yearly with various phases of vicious firearms legislation, running all the way from the abolition of the manufacture of arms within the state to the establishment of state controlled arsenals in which all privately owned firearms must be kept.

Heretofore the members of the N. R. A. and various other sporting groups have appeared at the committee hearings in opposition to such bills as would deprive them of their right to bear and use firearms. However, no machinery was available to reach the individual members of the State legislature nor to bring about uniformity of action by the several groups interested.

Recently there was formed a new organization within the state, known as the Massachusetts Firearms Legislative Association, whose purpose is to bring together the citizens of Massachusetts who are interested in promoting the use of firearms as a means of personal and national defense and as a sport; to secure the passage of legislation favorable to the ownership and use of firearms by reputable citizens of Massachusetts; and to carry on an educational campaign to the end that the citizens of the State may be informed as to the importance of training in the use of firearms.

Generally speaking, the set up in the organization, which is being incorporated, calls for key men located in or close to Boston who can keep intimately in touch with the legislative affairs, and a group of active men located one in each of the districts of the state from which a representative or senator is elected to the State Legislature. The latter are relied upon to

keep the sportsmen of their respective districts in touch with the general situation and to bring about such pressure as may be necessary.

At a dinner held in the Boston City Club the following were elected as officers of the Association:

President, James S. Stewart; Vice-President, Robert K. Randall; Chairman of the Board, Gordon Gillard; Secretary-Treasurer, Francis L. Burke.

The president, James S. Stewart, has been closely associated with the target shooting activities in Eastern United States for nearly thirty years; Robert K. Randall, Vice-President, is a well known sportsman, an authority in wild fowl and closely connected with the fish and game activities of the State; Chairman Gordon Gillard combines the activities of a sportsman with those of a target shooter. All three are lawyers and have been working together since the opening of the State Legislature. The Secy.-Treas., Francis L. Burke, is well known to most sportsmen and target shooters in New England.

Membership in the Association is limited to individuals, and the cost of such membership has been kept at a minimum figure of fifty cents. There is no overlapping with the activities of other sporting groups, and the desirability of the Association is apparent from the hundreds of individuals from the service veteran groups, sportsmen, N. R. A., and Reserve Officers Corps who are rapidly joining.

All club secretaries are urged to encourage their members to join this Association. Membership cards may be procured from the Secy.-Treas., 23 Elm St., Boston, Mass.—F. L. BURKE, Secretary.

silencer shall be presumptive evidence of its illegal possession by all the persons found in such automobile at the time such weapon, instrument or appliance is found. Where one of the persons found in such automobile possesses with him a valid license to have and carry concealed the pistol or revolver so found, and he is not there under duress, said presumption of unlawful possession shall not attach to the other persons found in the automobile. Nothing in this section contained shall apply to a member of the state police nor to a warden, superintendent, head-keeper or deputy of any prison, penitentiary, workhouse, county jail or other institution for the detention of persons convicted or accused of crime or held as witnesses in criminal cases, nor to sheriffs, policemen or other peace officers, nor to a person when on duty in the military or naval service of the United States, or of this state, or in the postal service of the United States, nor to the regular and ordinary transportation of such weapons, instruments or appliances as merchandise, nor to the driver of the automobile if he is a duly licensed driver of such automobile which he is operating for hire in the due, lawful and proper pursuit of his trade.

"This act shall take effect immediately."

## PENDING LEGISLATION

### Massachusetts

H. 663, making definite the fact that permits will be issued to carry pistols for target practice and specifying the information to be given with all concealed weapon permits, was passed by the legislature May 7. Under this act the following information will be given by each applicant for a license:

"Name, residence or place of business, commencement and expiration date of license, reason for issuing said license, license number, date of issuance of said license, place of birth, height, weight, complexion, color of hair, color of eyes, date of naturalization if foreign born, and signature of said licensee; and no further information from, or action of, the said licensee shall be required. A copy of every license so issued shall within one week after the granting thereof be sent to the said commissioner. The fee for each license issued under this section shall be fifty cents."

H. 758, providing for the revocation of pistol permits has been reported as "killed."

### New York

S. 369, setting the hours for taking game at "from 7 a. m. until 5 p. m." instead of from "sunrise to sunset" was passed by the Senate April 22.

A. 1515, making a permit issued in Nassau County valid in New York City, was reported favorably by the Senate Committee on Codes, April 29.

A. 1669, requiring that in Westchester County permits must be issued by the sheriff, has been reported favorably by the Senate Committee on Codes.

S. 1764, changing the expiration date of pistol permits issued outside of New York City, has been killed.

### Pennsylvania

H. 11x, introduced by Representative Brown, May 4, includes "firearms and shells" in a long list of luxuries to be subject to a 5 per cent tax.

## Progress Report on Firearms Legislation

### NEW LAWS

#### Massachusetts

H. 1687, formerly H. 951, changing the penalties for carrying a pistol or revolver concealed without a permit, was approved on April 18. In its final form all violators of the concealed weapon law will be punished by "imprisonment for not less than two and one-half years nor more than ten years in the State prison or by imprisonment in a jail or house of correction for not more than two and one-half years."

#### New York

S. 1897, making the presence of certain weapons in private automobiles presumptive

evidence of their illegal possession by the occupants of the vehicle unless some member of the party has a permit to carry concealed weapons, was approved May 1. The exceptions contained in the bill as it was finally adopted remove most of the more serious objections raised against the other bills of this type which were considered by this legislature. The bill reads as follows:

"The presence in an automobile, other than a public omnibus, of any of the following weapons, instruments or appliances, viz., a pistol, a machine gun, a sub-machine gun, a sawed-off shotgun, a black-jack, a sling-shot, billy, sandclub, sandbag, metal knuckles, bludgeon, dagger, dirk, stiletto, bomb or



## THE WEATHER

Cool wins and hot scores predicted  
for Remington shooters everywhere

# Rifle Remington



BRIDGEPORT, CONN.

JUNE 19

# REMINGTON SHOOTERS

## POSSIBLES and IMPOSSIBLES

by Frank Kahrs



The boys are mumbling something that sounds suspiciously like "Ritchie" these days. It wouldn't surprise me a bit if a record crowd showed up. If you would like an advance program of this shoot, I expect to have some about June 1, and I'll be pleased to mail one to you. You don't have to send any stamps or money, but please be sure to put your address on the letter.

A cigar and my compliments to Sgt. R. C. Sommer, Carnegie Tech coach. He successfully engineered both his men's and women's teams to Intercollegiate Championships this year. Guess the Sergeant will have a warm spot in his heart for PALMA MATCH from now on.

Nebraska Rifle and Pistol Gallery Championship matches (see report at right) are dedicated to an old friend of mine, Dr. Lincoln Riley. We all hope to see him at Camp Perry.

Lyle Miller did a nice bit of shooting out at the State Rifle Shoot at Madison, Wis. This shoot wasn't registered with the N. R. A., but it would be a shame not to give you an idea of what this KLEANBORE shooter did. At 50 yards with iron sights he scored 100 prone, 97 sitting and 95 standing—total 292. With scope, 100 prone, 98 sitting, 93 standing—total 291. Free rifle, iron sights, 99 prone, 100 sitting, 91 standing—total 290.

One of our friends across the water, Mr. A. Linford of Bradford, England, writes that, "I am quite satisfied with your PALMA .22's. My score for last summer's shooting was

## A TRI-MOTORED RECORD BUSTER



a 98.3 average for top place in the club, etc." Who wouldn't be satisfied?

Miss Veta M. Collins sends me a chatty letter telling a bit about the activities of the St. Paul Rifle and Pistol Club. According to the St. Paul papers, this lady regularly shoots 90 to 96 offhand with KLEANBORE.

Most every mail brings me some splendid targets shot with KLEANBORE or PALMA MATCH. Right now I have some beauties from Charles McClymount, Jr., of Erie, C. E. Youngflesh of Indianapolis, Walter Wellington of Berrien

Springs, Mich., and Jess Babb of Middletown, N. Y. Haven't room to print pictures of them all, but I'm glad to have American Rifleman readers send in their "record busters" any time.

Another load of N. R. A. Bulletins on my desk. My compliments, felicitations and thanks to these KLEANBORE and PALMA MATCH winners:—R. E. Loudon, J. M. Tokar, Emmet Swanson, Robert Dunbar, Chas. VanderBush, Leo Allstot, Lewis Bulgrin, L. Ferguson, Max Bretschneider, Morton Riegel, The Olympic Club of San Francisco, Geo. Widger, Louis Rehr and I. A. MacKellar.

## Individuals Score High with 3 Most Accurate Ammunitions

Charlie Hamby, a man who likes his shots to go where he looks, recently took Tom Salter's rifle, plenty of time, some PALMA MATCH and proceeded to shoot 50 consecutive at 100 yds. that make a very, very pretty group. Here it is:



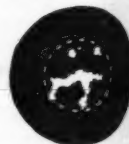
Fifty shots with PALMA MATCH fired by C. Hamby

Hamby also proved to himself and other interested parties that PALMA MATCH VEEZ 73 was another good bet by shooting 60 shots from a bench rest, 55 of which touched a one-inch circle, the average inside measurement for the entire group being 1.1".

## "KLEANKOTE" 10X POSSIBLE

Mr. C. E. Burkhart of the Volunteer Rifle and Pistol Club, Knoxville, Tenn. also doesn't like to let his shots get very far from each other. Here is a 10X possible he shot with the new KLEANKOTE ammunition.

Burkhart's handiwork—shot with KLEANKOTE at 100 yds.



## "KLEANBORE" GETS RESULTS, TOO

Out at the Indiana State Indoor Matches KLEANBORE shooter cleaned up. A quick reading of the scores is an education in what what in .22 ammunition these days.

## Standing Individual Championships

1. Russell Hopper 191 x 200 KLEANBORE
2. Wiley Dorset 187 x 200 KLEANBORE

## Prone Individual Championships

1. R. E. Harper 200 + 89 PALMA MATCH
2. Frank Russell 200 + 41 KLEANBORE

## Prone Iron-Sight Championships

1. R. S. Brown 200 + 22 KLEANBORE
2. Chester Henline 200 + 6 KLEANBORE

## Two Man Team Championships

Winners Dr. P. H. Malecki and Russell Hopper. Score 772 x 800, PALMA MATCH and KLEANBORE

JUN 1936

A PAPER FOR PEOPLE WHO SHOOT

# SCORE TRIPLE PLAY

**KLEANBORE, PALMA MATCH and KLEANKOTE\***  
Shooting Teams Divide Honors in Intercollegiate, Interscholastic and Military Events

## KLEANBORE Helps 9th Infantry Take Regimental Team Match

The KLEANBORE shooting 9th Infantry team led thirty-five regimental teams that vied for the honor of "National Regimental Gallery Rifle Champion, 1936" . . . score, 3775. The first six places in this match were taken by Remington shooters!

At the same time the team of Co. "E" of the 144th Infantry, also shooting KLEANBORE ran away from a field of 202 competitors in the National Company Team Match . . . score, 1886. United States soldiers can shoot!

## KLEANBORE tops in Military School Events

Here's the five-year record of Greenbrier Military School, Lewisburg, W. Va., in the William Randolph Hearst National Rifle Matches:—

- 1931—National Champs.
- 1932—National Champs.
- 1933—National Champs.
- 1934—1st in Southern Sector, 2nd in nation (lost by 1 point).
- 1935—National Champs.

Another fine team of Kleanbore shooters is that of the Fishburne Military School, Waynesboro, Va. This team won the First and Second places as well as the highest individual score in the Hearst National R. O. T. C. Rifle Matches in the Third Corps Area.

**Other KLEANBORE Team Wins**  
Poly Prep Rifle Club, Brooklyn, N. Y. is the "High School Gallery Champion, 1936." The Stadium High School, Tacoma, Wash., were tops in the Interscholastic Team Match . . . score, 1479.

## Sidney Rifle Club Tops with KLEANKOTE in Nebraska

Twenty-year old Don Brewer of the Sidney Rifle Club, Sidney, Neb., shooting a hybrid rifle with a home-made stock and KLEANBORE KLEANKOTE ammunition, made a sweep of the 4th Annual Nebraska Championships. First, he was top man on the Sidney Rifle Team, every man of which shot KLEANKOTE to win the Team Match. He then took the Individual Match. And finally the Re-entry Match.

KLEANKOTE did well for C. H. Breternitz, who won the interesting Capt. Riley Match . . . score, 399. Believe it or not, there were three other scores of 399 and the contestants tossed a coin for the medal! The other three-ninety-niners were R. A. Conrad, M. Sweet and W. S. Armine. Sweet also shot KLEANKOTE while the other two used PALMA MATCH.



Greenbrier Military School Rifle Teams—1935

The Niles Rifle Club won a 50 ft. shoulder-to-shoulder match with another Michigan club recently. In this match Walter Wellington fired a score of 100 prone and 96 off-hand for a score of 196 x 200. A composite of his offhand score is shown to the right.

Composite of Walter Wellington's offhand score of 96, shot with KLEANBORE ammunition. There are still plenty of men who can "stand up and shoot!"



## Carnegie Tech Captures Intercollegiate Team Championship with PALMA MATCH

Piling up a lead of five points in a hard fought competition, the Carnegie Institute of Technology rifle team definitely proved that they had what it takes to win the Intercollegiate Small Bore Championship of the United States. Specifically, they had five steel-nerved trigger squeezers, a splendid coach—Sgt. R. C. Sommer, and PALMA MATCH ammunition. What a combination!

Here are the official scores:

	Prone	Kneel.	Stand.	TOTAL
Dickinson . . .	98	96	85	279
Roach . . . . .	100	87	87	274
Dervaes . . . .	99	93	82	274
Scherba . . . .	99	90	83	272
Broadhead . .	99	92	82	273
	495	458	419	1372

The women's team at Carnegie Tech was right there, too. They shot PALMA MATCH to bring home the Women's Intercollegiate Team Championship. Below are the team scores. Note that the KLEANBORE shooters didn't do so bad either.

- 1. Carnegie Tech, 2978 x 3000, used PALMA MATCH
- 2. U. of Vermont, 2955 x 3000, used KLEANBORE
- 3. U. of Washington, 2955 x 3000, used KLEANBORE
- 4. Drexel Institute, 2954 x 3000, used KLEANBORE

## Naval Academy Team Sails to Victory

The U. S. Naval Academy Freshman team, shooting PALMA MATCH, swamped their rivals with a score of 2730 to win the Freshman Team Match (prone, kneeling and standing). Here are the various team standings:

- 1. U. S. Naval Academy  
2730 x 3000, used PALMA MATCH
- 2. U. of Maryland  
2716 x 3000, used KLEANBORE
- 3. Lehigh University  
2572 x 3000, used KLEANBORE
- 4. U. of Nebraska  
2490 x 3000, used REMINGTON

And here's another team that found the going good with PALMA MATCH. The Girls' Team of the Munhall High School, Munhall, Pa., won the Girls' Interscholastic Team Championship. Our future American womanhood shows promise of giving mere man a run for his money. Just look at these scores:

- 1. Munhall H. S., Munhall, Pa.  
1487 x 1500 used PALMA MATCH
- 2. Stadium H. S., Tacoma, Wash.  
1466 x 1500 used KLEANBORE
- 3. Aberdeen H. S., Aberdeen, Wash.  
1457 x 1500 used KLEANBORE

Run over all the preceding scores again. They offer conclusive proof of just one thing—a team can't go wrong with Remington ammunition!

\*KLEANBORE, PALMA MATCH and KLEANKOTE are trade marks of Remington Arms Co., Inc.

## CLUB NOTES

At the annual meeting of the Cuyahoga Civilian Marksmen's Association (Cleveland, Ohio) officers of the Association for 1936 were elected, as follows: John Harrison of the East Cleveland Rifle and Revolver Club, president; Lee Herrington of the German Rifle Club, vice-president; Dr. E. J. Witzel reelected secretary and treasurer; A. E. Hart reelected executive officer; and Harvey King appointed assistant to Hart.

The Brooklyn Poly day session rifle team out-scored six metropolitan colleges to annex the seventh annual St. John's Intercollegiate Invitation Rifle Meet held at the Manhattan School of Firearms on March 28. Brooklyn Poly scored 600 points. This team won the event last year and now holds two legs of the three necessary to retire the St. John's rifle trophy.

Over seventy shooters attended the first annual R. & H. Rifle Club Dinner, held in Niagara Falls, New York, on February 29. In reporting success of the occasion, C. W. MacRitchie, secretary of the club, says: "Capt. Paul Shepherd talks the sportsman's language. He gave us the benefit of his experience in organizing rifle shooting groups, and before we adjourned we had entries of six teams in the 'B' Section of the Niagara Frontier Rifle League. We expect to make the dinner an annual affair."

The Southern Division of the Colorado State Rifle Association fired 14 weeks of Postal matches the past Indoor season, with 8 clubs competing. Pueblo American Legion finished the schedule with 12 wins and only 2 losses to lead the league. Royal Gorge, Pueblo Rifle Club and Pikes Peak Club all won 10 and lost 4, thus bringing about a 3-way tie for runner-up honors. Ten men fired each week, the 5-high scores counting for record and the five lowest scores constituted a "Class B" League. This arrangement brought out the required quorum each week and created more interest in the matches.

In the first annual pistol championship match conducted by Bay State (Mass.) Rifle & Pistol Association held at Brockton on March 1, S. C. Ellis of the Baker Club scored 180 to win the slow fire pistol event while the 3-stage championship was captured by Edward Culkin, Boston Police Department. Culkin scored 265. The Second Annual Bay State Rifle Meet was held at Beverly, March 21, 22. Divisional Team winners included the Wakefield, Melrose and Beverly Clubs and individual winning honors went to E. Clements, E. Holbrook, M. Thayer and F. Kingsbury. A modified Kennebec Classification system was used in determining all prize winners.

The North Bay Rifle League of Richmond, California, held its monthly .30 caliber match at Leona Heights Range on March 15. Eleven club teams competed. Albany (Calif.) Rifle Club had the highest total, scoring 907 x 1000. Mare Island finished second with 889.

In a slow-fire pistol team match held in the Norwalk (Conn.) Armory, March 20, Danbury Rifle Club, Inc., the Norwalk Rod & Gun Club and the Norwalk Police Department finished in the order named, scoring 798, 768, and 732 respectively. Ten men from each club (5 high to count) fired 20 shots each at 50 feet.

Central division ladies' team of the Colorado Rifle Association won first honors for state women sharpshooters in the annual shoot held in the armory at Golden, Colo., with a score of 1214 out of a possible 1500. Three women teams participated. Bess Shepard won a bronze medal for the highest individual score of 272 out of a possible 300. Ethel Edwards was second with 263 and retains the highest average of the year with a mark of 268 out of a possible 300.

Seventy-five marksmen competed in the shoot conducted by Central Indiana Rifle League, held at the Armory in Indianapolis on March 8. Charles Blanton of Lyons captured first place in the standing event with the high score of 95.

Sheridan (Ill.) Rifle and Pistol Club, assisted by the Junior American Legion of the Highwood post, is making a drive to secure funds to build a

club house and indoor range. An ideal site has been offered by a local businessman. The proposed building will cost about \$800 and will accommodate 60 persons.

Burlington (Iowa) Rifle Club recently tried something new and novel in the way of rifle matches. The club programmed an indoor match using big bore rifles. The contestants used heavy Springfield 30-06 rifles, adapted to indoor firing by using reduced loads. The match, for which prizes were provided for first and second high scores, was fired off-hand at 50 feet, on official N. R. A. targets. Specially loaded ammunition, with a very light powder charge, was used. J. F. Beard, Secretary of the Burlington Club, says the match proved so interesting that the members want more of them.

Thirty-four schools averaging nearly three teams each and representing nine mid-western states, made 96 team and 617 individual entries in the various indoor scholastic matches fired at Kemper Military School on March 13-14. Over 100 prizes were awarded to boys and girls who placed highest in the individual and team events. Captain L. V. Jones, P. M. S. & T. of Kemper, handled arrangements for the very successful meet.

The Fourth Annual Kansas small-bore rifle tournament shoot closing the indoor rifle season, was held again this year over the Sterling Armory Range on April 24. Course was 50 ft., any sights, five shots in each of four positions, N. R. A. rules governing. Five N. R. A. clubs took part. Scores were: Lyons, 895; Hutchinson, 891; Sterling, 876; McPherson, 823; and Bushton, 771.

Members of the rifle clubs in the Mohegan (Conn.) Rifle League held their annual banquet April 17 at the Royal Garden in Montville. Eighty-three members of the nine clubs in the league were present and enjoyed a roast beef dinner after which moving pictures, secured from the National Rifle Association, were shown by Carl Brend. The pictures depicted scenes and matches at Camp Perry last September. Thomas Dunn, president of the league, awarded the first prize to the winning team, the Norwich Rifle Club, and second prize to the J. B. Martin Club, both teams having won the same prizes last year. Medals were also awarded the highest scoring individuals in the league.

Final standing of clubs in the Pittsburgh (Pa.) and Suburban Rifle League for the 1936 indoor season shows South Hills on top with 14 wins and no losses. Seneca took 12 out of 14 matches to place second.

Medal winners at the Third Seattle (Wash.) Outdoor Pistol and Revolver League Match fired Sunday, April 19, were: H. E. Wales, Bremerton, 157; V. I. Lindor, Seattle Police, 160; John Jewett, U. S. Coast Guard, High .38 Slow Fire, 173; Capt. John J. Haag, Seattle Police, High .45 Slow Fire, 165; Bob DeWitt, Aberdeen, High Tyro, .38 Slow Fire, 168; Fred Shearer, Aberdeen, High Tyro .45 Slow Fire, 153; Mrs. Frank Fisher, Los Angeles, High Lady Individual, 132; Patrol R. M. Anderson, First Place Pocket Revolver, 266; William Warshal, Elliot Bay, Second Place Pocket Revolver, 248; Patrolman Roy Mahoney, High Tyro, Pocket Revolver, 235; Patrolman Harvey O'Brien, Second Tyro, Pocket Revolver, 228; Roy E. Meister, Puget Sound Rifle Club, First Place .45 Match, 256; M. C. Peterson, U. S. S. New York, Second .45 Match, 237; W. J. Phillips, U. S. S. New York, High Tyro, .45 Match, 231.

The Richmond (Calif.) Rifle and Revolver Club has been incorporated under the laws of the State of California, and will be known in the future as the Richmond Rifle and Revolver Club, Incorporated.

Thirty-nine rifle and pistol clubs in posts of the VFW in Virginia are being organized by Lt. Charles E. Chapel, U. S. M. C., newly appointed Director of Marksmanship for the Department of Virginia, Veterans of Foreign Wars. The club teams will compete at the State Encampment of the VFW, at Staunton, Virginia, in July.

## COMING EVENTS

We publish below a list of coming events, reported up to the time of going to press on May 10th. The events are arranged by states for convenient reference. State associations and club secretaries are urged to send the Editor advance information regarding all important matches to be conducted throughout the year. Name of the meet, type of competition, dates and to whom shooters should write for programs is the information needed in order to have the shoot listed under this column. There is no charge for such listing. \* indicates Registered Tournament.

### Alabama

June 7: Alabama State .30 Caliber Rifle Matches and Tryouts for Camp Perry Civilian Team, conducted by Alabama Rifle Association. At Lewisburg, near Birmingham. For details address M. F. Scott, Sec'y, c/o Alabama Power Co., Birmingham, Ala.

### California

June 13-14: Third Annual Western Smallbore Championship Rifle Match, conducted by the Richmond (California) R. & P. Club. At the Richmond Municipal Smallbore Rifle and Pistol Range, located one-quarter mile north of the Richmond-San Francisco Ferry. For programs address E. J. Martin, 1200 McDonald Avenue, Richmond, California.

### Connecticut

June 6-7: Fifth Annual Connecticut State Small Bore Shoot. Sponsored by Conn. State Rifle & Revolver Association, at East Haven. For programs write Hughes Richardson, Lyman Gun Sight Corp., Middlefield, Conn.

### Illinois

The Illinois State Rifle Association's program for June:

June 7: Dewar Individual at Ft. Sheridan; also Northwestern Illinois District matches at Milan.

June 14: .30 Caliber Navy Match at Milan; also Service Pistol Match at Ft. Sheridan.

June 21: .30 Caliber Wimbledon at Ft. Sheridan.

June 28: East Central Illinois Small Bore Matches at Champaign; also Police Pistol Team Match at Ft. Sheridan.

Programs and information regarding any of the above matches may be obtained from M. Worthington, president, Room 1514, 20 N. Wacker Drive, Chicago.

### Indiana

June 13-14: Muzzle Loading Rifle Meet, sanctioned by Muzzle Loading Rifle Association. At New Albany. Schedule includes events at 60, 100 and 220 yards. Further details may be obtained from E. M. Farris, Portsmouth, Ohio.

June 27-28: Mid-West Small Bore and Pistol Tournament. Sponsored by Post No. 11 American Legion Rifle Club. At LaFayette. Schedule includes five rifle and five pistol events. Generous trophies and medals. For programs write Jno. F. Holmes, Sec'y., 506 Russell St., West LaFayette, Ind.

July 18-19: Indiana State .30 Caliber Matches. Sponsored by Indiana N. G. and Indiana State Rifle Association. For programs write Lt. Col. Basil Middleton, Sec'y, Indiana State Rifle Association, 4 Faculty Row, Culver, Ind.

### Iowa

June 27-28: Iowa State Small Bore and Pistol Tournament, conducted by Iowa State Rifle Association. At Des Moines. For programs write G. G. Cooper, Sec'y., 816 Telephone Building, Des Moines, Iowa.

Aug. 1-2: Iowa Civilian Team Tryouts for Camp Perry, conducted by Iowa State Rifle Association. At Des Moines. For details address G. G. Cooper, Sec'y, 816 Telephone Bldg., Des Moines, Iowa.



## Kentucky

**June 13-14:** Kentucky State Pistol Championship Matches. At Lexington. For programs write Dr. Scott Breckenridge, 164 Market Street, Lexington, Ky.

## Maine

**\*June 20-21:** First Maine State Rifle Association Registered Small Bore Tournament. At Auburn. For programs address K. Cross, secretary, Solon, Maine.

## Maryland

**\*July 1-5:** Annual Eastern Small Bore and Pistol Tournament. At Camp Ritchie. Programs now ready may be obtained by writing Frank J. Kahrs, % Remington Arms Co., Bridgeport, Connecticut.

## Michigan

**\*June 20-21:** The Michigan State Pistol Matches. At Briggs Range near Detroit.

**July 4, 5-11, 12:** .30 Caliber Rifle Matches. At Grand Rapids.

**\*July 18-19:** .22 Caliber Rifle Matches. At Ann Arbor. On the same dates Vice President Stuart B. Miller will be authorized to fire the same matches at Marquette for the Upper Peninsula members. For programs or additional information address, Lt.-Col. Payson D. Foster, 2000 Second Avenue, Detroit, Michigan.

## Minnesota

**June 6-7:** Minnesota State Small Bore Matches. Sponsored by Minnesota Rifle & Revolver Association. At Ft. Snelling. For programs write Geo. J. Kuch, acting Secy., 3835 Perry Ave., Robbinsdale, Minn.

**June 21:** Second Annual Small Bore Tournament. Sponsored by Red Wing Rifle & Pistol Club. At Red Wing. For programs write O. Ottem, Secy., Red Wing, Minn.

## New Mexico

**August 1-2:** New Mexico Rifle and Pistol Association .30 Caliber Match and Tryouts for Camp Perry State Civilian Team. At Santa Fe. For details address, L. D. Wilson, Secretary, 500 Kathryn Avenue, Santa Fe, New Mexico.

## New York

**June 6-7:** New York State Small Bore Matches, conducted by New York State Rifle Association. At Peekskill. Also:

**June 7-13:** New York State .30 Caliber Matches, conducted by New York State Rifle Association. For programs address Fred M. Waterbury, Secy.-Treas., 305 East 45th Street, New York, N. Y.

**June 21:** Second Annual Long Island Pistol Team and Individual Championships, conducted by Long Island R. & P. Association. At Roslyn. For programs address Harry Hagedorn, Director, 47 5th Street, Valley Stream, L. I., N. Y.

**June 28:** The American Legion Fidan 50 meter Small Bore. At Greenwich. Teams will be composed of five members from any Post, three high scores to count for team scores. For programs address J. F. Woolslager, Castorland, New York.

## North Carolina

**July 18-19:** North Carolina Civilian Team—Tryouts for Camp Perry. At Ft. Bragg. For entry blanks and detailed information write Capt. H. M. Rooney, % Henley Inn, Linville, N. C.

## Ohio

**June 2-28:** Ohio State Small Bore .30 Rifle and Pistol Matches. At Camp Perry. The rifle matches include 50, 100 and 200 yards, and 50 meter matches, both metallic and any sights. High Power Matches at 200, 300 and 600 yards. The pistol program will have both .22 caliber and larger events. Programs now ready may be obtained from Roy B. Foureman, Secretary, 1374 Hollywood Place, Columbus, Ohio.

**July 4-5:** Seventh Annual Muzzle Loading Rifle Shoot. Sponsored by Sporting Goods Dealers of

Akron, Ohio. At Canal Fulton. Matches at 100 and 220 yards. Prizes consist of trophies, medals and merchandise. For programs write Wm. W. McQuerry, 158 King Drive, Akron, Ohio.

**\*July 31-August 1-2:** Goodyear Zeppelin Small Bore Tournament, conducted by Zeppelin Rifle Club. At Akron. For programs address James A. Hale, Secretary, 257 The Brooklands, Akron, Ohio.

**\*August 8-9:** Third Annual "Fort Harmar Small Bore Open Tournament" conducted by Fort Harmar Rifle Club, Inc., of Marietta, Ohio. The Club this year is programing more matches than at any of the previous tournaments. Cash awards, medals, and prizes guaranteed. Programs will be off the press soon. For further information write L. R. Miller, Secretary, 735 Fourth Street, Marietta, Ohio.

**\*August 23-September 13:** The National Rifle and Pistol Matches including the Small Arms firing school to be conducted the first week, followed by the N. R. A. Matches and concluding with the National Rifle and Pistol Matches, conducted by the War Department. At Camp Perry. Programs may be obtained from the N. R. A. about July 1.

## Oklahoma

**June 6-7:** Eleventh annual State championship rifle matches of the Oklahoma Rifle Association (high-power section). At the Charles F. Barrett range in Okmulgee. For programs write Elmer C. Croon, Secretary, Okmulgee, Oklahoma.

## Oregon

**June 18-19:** Oregon Civilian Team Tryouts for Camp Perry. At Clackamas Range, near Portland.

**August 8-9:** Oregon State .30 Caliber and Pistol Matches. Sponsored by Oregon Rifle Association. At Clackamas Range, near Portland.

## Pennsylvania

**June 6, 13, 20, 27:** Ft. Pitt Rifle Club schedule for June includes matches on each Sunday. At Pittsburgh. For programs write C. W. Freehling, Secy., 1118 Woodland Ave., N. S. Pittsburgh, Pa.

**\*June 14:** Spring Small Bore and Pistol Tournament, conducted by Elizabethtown Rifle Club. At Middletown. For programs write O. H. Schwanger, Secy., Middletown, Pa.

**\*July 9-11:** Fourth Annual Indiana Small Bore Tournament including the Small Bore State Championship (by permission of his honor, the Governor). At Indiana. For programs address Alan B. Salkeld, Secretary, Indiana, Pennsylvania.

## Texas

**July 4-5:** Texas State Pistol Matches. At San Antonio. For programs address L. L. Cline, 325 Cedar Street, San Antonio, Texas.

## Washington

**June 6-7:** Washington State Small Bore Matches. Sponsored by Seattle Rifle and Pistol Club. At Seattle.

**July 4-5:** Northwest Long Range Championship (1,000 and 1,200 yards). Sponsored by Yakima Rifle Club. At Yakima.

**July 18:** Northwest International Pistol & Revolver Matches. At Ft. Lawton, near Seattle.

## Wisconsin

The Wisconsin Rifle Association Summer Program:

**June 14:** High Power Matches at Ladysmith; also High Power Matches at County Line Range, Racine.

**June 21:** Small Bore Matches at County Line Range, Racine.

**June 21:** First Annual Tri-State .30 Rifle Meet. Sponsored by Post No. 52 American Legion Rifle Club. At LaCrosse. Schedule includes slow fire and rapid fire events at ranges up to 500 yards. Cash prizes. For programs write Harry H. Gerke, Secy., LaCrosse, Wisconsin.

**June 28:** V. F. W. Matches at Oshkosh.

**July 11-12:** State Small Bore Matches at Kohler.

**July 26:** Small Bore Matches at Viroqua.

**Aug. 8-9:** State High Power Matches at County Line Range, Racine.

**Sept. 27:** Small Bore Match at County Line Range, Racine.

Programs and information regarding any of the above matches may be obtained from H. Geise, Secy., 1707 Maple St., Racine, Wisconsin.

## NEW CLUBS CHARTERED

**Laurel Rifle and Pistol Club,** Mr. John W. Widdifield, Secretary, 1016 8th Avenue, Laurel, Mississippi. **The Armory Rifle Club,** Mr. Joseph F. McGlone, Secretary, 1101 East 23d Street, Paterson, New Jersey. **Lewis Institute Rifle and Pistol Club,** Mr. John Kenton Primm, Secretary, 4649 N. Kenton Ave., Chicago, Illinois. **Batesville Rifle Club,** Mr. Forrest Kessens, Secretary, Batesville, Indiana. **Illinois College Rifle Club,** Miss Evelyn Alwine, Secretary, care College, Jacksonville, Illinois. **Knights of Pythias Rifle and Pistol Club,** Mr. C. H. Hightower, Secretary, 3102 Fifth Street, Fort Arthur, Texas. **Washington Heights Rifle and Pistol Club,** Mr. Jack Wall, Secretary, 1327 Troy Avenue, Brooklyn, New York. **Elkhorn Rifle and Pistol Club,** Mr. W. G. Tharp, Secretary, Medora, North Dakota. **Fort Billings Rifle Club,** Mr. D. M. Carr, Secretary, 93 Patterson Avenue, Gibbstown, New Jersey. **Meeker Rifle and Pistol Club,** Mr. John A. Rabaka, Secretary, Meeker, Colorado. **Grand River Rifle Club,** Mr. Kenneth C. Pangborn, Secretary, 131 W. High Street, Painesville, Ohio. **Carlstadt Legion Pistol & Rifle Club,** Mr. George Milhaylo, Secretary, 460 Howe Avenue, Passaic, New Jersey. **Marshalltown Y. M. C. A. Pistol & Rifle Club,** Mr. Norval Holder, Secretary, Y. M. C. A., Marshalltown, Iowa.

**Tuscan Rifle and Pistol Club,** Mr. A. N. Anderson, Secretary, Dixfield, Maine. **St. Paul Post Office Pistol & Rifle Club,** Mr. W. A. Peterson, Secretary, 812 Curfew Avenue, St. Paul, Minnesota. **Reo Rifle Club,** Mr. M. L. Hopkins, Secretary, 2012 Rundle Avenue, Lansing, Michigan. **Colonial Rifle & Pistol Club,** Mr. Edward F. Pierce, Secretary, 511 Bard Avenue, Staten Island, New York. **Eastport Rifle and Pistol Club,** Mr. F. A. Garmel, Secretary, Eastport, Maine. **Douglas County Rifle Club,** Mr. Robert T. Jones, Secretary, Castle Rock, Colorado. **District of Columbia Rifle & Pistol Club,** Mr. Russell Kingsbury, Secretary, 5121 7th Street, Washington, D. C. **Gardner Rifle and Pistol Club,** Mr. Harold F. Whiting, Secretary, 19 Beech Street, Gardner, Massachusetts. **Seneca Falls Rifle and Pistol Club, Inc.,** Mr. Jack Compton, Secretary, 5 Troup Street, Seneca Falls, New York. **Clio Rifle and Pistol Club,** Mr. Austin Gilbert, Secretary, 428 Pine Street, Clio, Michigan. **Sweetser Rifle and Pistol Club, Inc.,** Mr. C. F. Tyner, Secretary, Sweetser, Indiana. **New England Rifle and Pistol Club,** Mr. Richard J. Gardner, Secretary, New England, North Dakota. **Franklin Firemen's Rifle and Pistol Club,** Mr. Frank Sinsel, Secretary, R. No. 31, Pine Street, Conemaugh, Pennsylvania.

**American Legion Post No. 104 Junior Rifle Club,** Mr. Alfred C. Berg, Instructor, 515 Alabama Street, Vallejo, California. **Aberdeen High School Rifle Club,** Mr. R. A. Weston, Instructor, Aberdeen, Idaho. **Tonawanda High School Rifle Club,** Mr. Ernest Springer, Instructor, 200 Grove Street, Tonawanda, New York. **Garden City Junior-Senior High School Rifle Club,** Mr. Alan L. Douglas, Instructor, 56 Fifth Avenue, Mineola, New York. **Troop No. 32 Rifle Club,** Mr. R. S. Osborne, Instructor, 436 Huntington Road, Kansas City, Missouri. **South Side Junior Rifle Club,** Mr. Ralph G. Smith, Instructor, 720 S. Harris Avenue, Columbus, Ohio. **South Side High School Rifle Club,** Mr. Harold Windmiller, Instructor, South Side High School, Fort Wayne, Indiana. **South Side Junior High School Rifle Club,** Capt. F. E. S. Turner, Instructor, 3005½ 2d Avenue N., St. Petersburg, Florida. **H' Park H' Rifle Club,** Mr. T. Earle Hamilton, Instructor, 527 West Page Avenue, Dallas, Texas. **Kew Gardens Junior Rifle Club,** Mr. Clair Boyd Gahagen, Instructor, 82-50 Kew Gardens Road, Kew Gardens, New York. **Sons of the Legion Squadron No. 175 Rifle Club,** Mr. E. M. Guise, Instructor, Stow, Ohio. **Newark Academy Rifle Association,** Mr. Ernest F. Lawes, Jr., Instructor, 83 South Clinton Street, East Orange, New Jersey.

**Reading High Rifle Club,** Mr. Kenneth A. Lucas, Instructor, 435 Franklin Street, Reading, Massachusetts. **Firestone Junior Rifle Club,** Mr. Wm. E. Kelly, Instructor, Box 33, Ellet, Ohio. **Carpinteria Junior Rifle Club,** Mr. R. G. Bassett, Instructor, Box 192, Carpinteria, California. **Boy Scout Troop No. 4 Rifle Club,** Mr. D. W. Malone, Instructor, 1628 D Park Street, Honolulu, T. H. **Clatsop Junior Gun Club,** Mr. Robert C. Thompson, Instructor, 1621 Overing Street, New York, New York. **Birmingham R & P Club,** J. P. Prince, Secy., 1852 Princeton Ave., Birmingham, Ala.

## D. C. M. NOTES

Price Changes Effective July 1  
Also Apply to .22 Springfield

**I**N THE March issue of THE AMERICAN RIFLEMAN the Director of Civilian Marksmanship announced the change in price, effective July 1, 1936, of the caliber .30, U. S. Rifles, M1903. There also will be a change in the price of the U. S. Rifles, cal. .22 M1 and the M1 converted to the M2 type, effective July 1, 1936, as follows:

U. S. Rifle, Cal. .30, M1903 Style S (Service).....	\$32.75	\$41.36
U. S. Rifle, Cal. .30, M1903 A1 (Springfield Service Rifle with type C pistol grip stock).....	35.35	42.22
U. S. Rifle, Cal. .30, M1903 Style NM (National Match Rifle, star gauged and specially selected, equipped with type C pistol grip stock).....	53.10	No change in price
U. S. Rifle, Cal. .22, M1922 M1.....	46.00	54.89
(Extra Magazine M1922 M1).....	1.56	2.30
U. S. Rifle, Cal. .22, M1922 M1I, NRA (Cal. .22, M1922M1 with M2 bolt and magazine).....	48.39	55.79
(Extra Magazine for above rifle).....	1.50	2.41

The Chief of Ordnance has notified the Director of Civilian Marksmanship that all purchase orders received at arsenals designated by this office from members of the National Rifle Association prior to close of business on June 30, 1936, will be filled at prices in effect on June 30, 1936, although the items may not actually be shipped until after July 1, 1936.

Receipt of a sales order approved by the Director of Civilian Marksmanship by a member of the National Rifle Association does not constitute a sale, unless order and necessary funds are received by the arsenal on which order is drawn prior to July 1, 1936. If sale is to be made at the present prices order must be received at the arsenal designated by the Director of Civilian Marksmanship NOT LATER THAN JUNE 30, 1936.

### National Board Meeting

The National Board for the Promotion of Rifle Practice met in Washington at 10:00 A. M., May 8, for the purpose of drawing up rules and regulations for the conduct of the 1936 National Matches. The Assistant Secretary of War, Mr. Harry H. Woodring, President of the Board, made an address of welcome and laid down certain principles for the guidance of the board.

The following are the main changes of the 1936 Matches from the Matches of 1935:

## STILL TIME TO ENTER OUTDOOR MATCHES

The entry closing date for all matches in the new N. R. A. outdoor program has been extended to June 15th.

This extension which gives shooters a "last chance" to enter the summer program of home range matches will not, however, affect the return of fired match targets. All fired targets are due at National Headquarters not later than July 15th, at which time results will be published and medals awarded. The program with entry blanks inserted was mailed to all members early last month.

- Matches will be held from Monday, August 24, to Saturday, September 12. The Small Arms Firing School will be held from August 24 to August 29. The National Rifle Association Matches will be held from August 30 to September 7. The National Matches proper will be held from September 8 to September 12.
- The attendance of teams from the different groups such as National Guard, Organized Reserves, civilians, etc., will be the same as in the past.
- Headless cocking piece will be eliminated.
- One sighting shot at 600 yards and two sighting shots at 1000 yards will be allowed each competitor in the National Individual Rifle and National Rifle Team Match. [But no sighting shots will be provided in N. R. A. .30 Caliber Matches.—Editor.]
- The Infantry Match, a combat problem for one team captain and a squad of six riflemen and one automatic rifleman, with assistant, will be fired in the National Matches proper. This match will be compulsory for Service, National Guard and Organized Reserve Teams. Optional for all others.

The Small Bore Range is now being enlarged to approximately double its 1935 capacity. Sliding frame targets in the 200 yard small bore butts are being installed.

Additional toilet facilities are being installed.

Full details concerning the selection of state civilian teams by competition and other necessary administrative regulations have been mailed to each State Adjutant General—B. W. MILLS, Major, Executive Officer.

## THE BIGGEST LITTLE SHOOT IN THE EAST

**O**N MAY 3rd, 1936, after gigantic tasks of preparation by members of the Amateur Rod and Gun Club of Newark, N. J., the 3rd Annual A. R. G. C. 50 Metre Individual and Team Invitation, affectionately referred to as "One of the Biggest Little Shoots in the East," was held on the Route No. 29 Plainfield range. One hundred and fifty-six individuals competed in one or another of the four classes established, 46 individuals fired in the re-entry and 18 teams returned scores in the team match. Shooters were attracted from five states.

Despite two thundershowers which thoroughly ducked two relays of shooters, and through which Major M. R. M. Gwilliam of Bloomfield fired a perfect 200 total, 79 competitors completed scores in an Expert Class. The veteran L. N. MacLeod of Roslyn with 199 was second, outranking S. J. Vitano of Valley Stream, who had the same score.

In the Beginner Class 46 entered, Bill Scrimgeour of W. Pittston, Pa., tallied 197 to take the gold medal, Bruno Roesler of Roxbury, N. J., was second and a junior shooter R. Hartrauft of So. Orange was third.

The Average Shot class, in which 23 competed, was won with a 196 by E. G. Smith, Jr., of Verona, N. J. The Ladies Class was won by Alice Murdock of Woodhaven, L. I., N. Y., with a fine 197 total. She also received a gold medal.

Major Gwilliam added to his laurels by firing a perfect 300 score in the Re-entry. Bill Schweitzer took second money with a 299 and Sam Tekulsky was third.

The Madison (N. J.) R. & P. Club won the A. R. G. C. Team Trophy by defeating such well known and active teams as Roslyn, Fenmore, Allendale, Richmond Hill, Wepawaug (Conn.) and Brooklyn-Edison.

In addition to many merchandise prizes in all classes which spirited A. R. G. C. members presented, Mr. S. Fuzy of the Singer Mfg. Co., won a \$5.00 bill by simply firing a lucky shot on a novel luck target originated by the A. R. G. C.

Following conclusion of the match which was the most successful shoot held in New Jersey since Sea Girt, many letters of congratulations were received from shooters who attended the match. Secretary R. B. Champlin has compiled a bulletin showing the classification used and grouping of the scores, a copy of which he will gladly send to anyone interested in this phase of tournament organization. Address the Secretary, A. R. & G. C., 88 No. Walnut St., East Orange, New Jersey.—R. B. CHAMPLIN.

## HOW MINNESOTA CLUB DOUBLED ITS MEMBERSHIP

NEW officers of the Alexandria (Minn.) Rifle Club elected recently are as follows: President, George Lewis; Vice President, Max Wagner; Secretary, H. E. Ripley; Treasurer, Clarence Geske; Range Officer, Earl Johnson.

This club has made real progress during the last year. Last fall some of the members discussed the possibilities of securing a larger indoor range, as the present one at that time only accommodated five shooters. We were able to get another location which was well suited to our requirements, but rather expensive. We then discussed the possibilities of raising funds to meet this new expense. We decided to raffle off some guns and run a shooting gallery at the County Fair. This proved to be a very good venture, netting us a net profit of over \$300. We then put on a membership campaign and have increased our membership to approximately 60 members, double last year's membership.

We have a very fine club with good shooting equipment and, above all, one that has the right spirit. We feel that our club is an asset to The National Rifleman's Association. C. W. BUNDY, Secretary.

## AKRON LEAGUE ATTRACTS

DURING the Summit County (Akron, Ohio) Rifle league indoor season a total of one hundred matches were fired, everyone of which was reported in two local papers or over a local radio station. The result of this publicity is new League members. We now have fourteen teams, and as this is too many to shoot on one schedule we have set up an A & B schedule for the outdoor season. This enables the larger and stronger clubs to enter two teams providing competition within the ability of the average ordinary shooter.

The final League standing at the end of the indoor season was:

Zeppelin	18	1	.947
Goodrich	18	1	.947
Argonaut	14	5	.737
Babcock-Wilcox	13	6	.684
Firestone	10	9	.526
Post 209	9	10	.474
Zeppelin Girls	9	10	.474
General Tires	5	14	.263
Kenmore	2	8	.200
National Guard	2	17	.105
Cavalry	0	19	.000

The individual standing was:

Aggreg. Milton Klotz 5442 x 5700 Pr. Kn. St. Zeppelin  
St. Milton Klotz 1720 Average 90.53 Zeppelin  
Kneel Miller Foutts 1864 Average 98.1 Goodrich  
Prone W. J. Baumgardner 1896 Average 99.79 Goodrich

In addition to the four gold medals to the high individuals we issued five silver medals to the first place team, and one silver and four bronze to all other teams.

We have issued medals on this basis for two years and find it to be our greatest drawing card for the new men and the new clubs. We have kept in mind the fact that the new man must have some goal that he knows he can reach. Of the 300 shooters in our fourteen member Clubs, 200 actively participated in the league competition.—J. R. BAUMGARDNER.

## MORE ON NIGHT SHOOTING

IN the February 1936 issue of THE RIFLEMAN I note an account of a "new" wrinkle in shooting circles, that of shooting on flood-lighted targets after dark by the Arlington (Mass.) Rifle Club.

Without wishing to detract any credit from the Arlington Club for their innovation I would like to state that the Wilkes Barre (Pa.) Rifle and Pistol Club used flood-lighted targets on their 100-yard range nearly all last summer, with very favorable results, some 16X and 17X possibles being made out of 20-shot strings. Also I would like to say that it is a very tricky game.

Not being able to see anything except the lighted target you cannot tell how the wind is behaving at the butts. Also mirages spring up and die down with unbelievable quickness. One shot the target will be sharp and clear, the next shot the target may look as if it were under five feet of rippling water.

It is most fascinating. You lie there on the cool ground in total darkness except for the bright spot of light 100 yards away. Intently you squeeze the trigger, then the report and red streamer of burning powder from the muzzle (if you are using Lesmoke, smokeless makes no flash) you lean over and spot your shot with satisfaction.

One other thing is mosquitoes. The only solution we found was to have two fellows gently fan them away for each man as he shoots his string.—K. A. EDBURGH.

## NORTH DAKOTA CLUB GROWING

OUR club, The Arnegard (N. D.) Rifle Club, was organized about the middle of last year. We immediately applied to the National Rifle Association for a charter, submitting fifteen names as our charter members. We were not long in getting the charter, but before it came we had increased our membership to twenty. Naturally we were quite elated over our success as Arnegard is not a large village, having only 235 inhabitants.

We started shooting whatever small bore guns we could scare up at targets we purchased or borrowed from other sources. Eventually our equipment came from the Government. From this time on things became more interesting and we started to grow, and at the present time we have forty-nine paid-up members and

are really getting a lot of enjoyment out of it. Of course, there are a few, perhaps five or six, who, like myself, are a bit advanced in years but we can still "get set in the sling and put a few in the black." With the exception of five of us the entire club consists of beginners.

The club has an ideal indoor 50-foot range for small bore shooting and also an outdoor range for summer use. Eventually we hope to have a 30 caliber range with all stations up to 1000 yards.

To give a little encouragement to beginners, let me say this, a good number of our fellows when they started were only able to get a score prone of 20 to 30 out of 100. The same fellows now are ranging from 80 to 95 out of 100; so you see it can be done.

We have just completed a postal match but don't know at this writing how we came out. Incidentally, we are strong for such matches and would like to hear from other clubs in our class.—CHARLES F. BROMAGHIM, President.

## ALABAMA STATE MATCHES

THE Alabama State small bore matches held at the national guard range in Lewisburg, sponsored by the Alabama State Rifle Association and the Birmingham Rifle and Pistol Club, drew about 100 entries. These included shooters from every section of Alabama and out-of-state visitors.

The grade of competition was excellent, six winners in the national matches at Camp Perry being entered in one relay. The matches were held under the rules and regulations of the National Rifle Association, with which the local club is affiliated. L. Q. Bradley of the N. R. A., himself a native Alabamian, was present.

The matches were voted an outstanding success by all those who attended them. It is doubtful who got the most kick out of them, the old heads to whom they were a revival of past glories, or the many tyros who had never shot in actual competition before.

Much of the success of the events were due to the excellent handling of them by the committee in charge. Special praise is due M. F. Scott for his work in keeping the records and scoring the targets, and Lieut. C. C. Jones, O. R. C., for his handling of the pit detail in the long range matches. Also the work of Capt. J. W. Graff, O. R. C., as range officer was outstanding and drew much favorable comment from old heads.

Match winners were: 50 Meter Scott Trophy Match, A. S. Brewer, Mobile; Birmingham Special Match, Joseph Hankins, Jasper; State Championship, T. K. Lee, Birmingham; Dewar Course, F. D. Kuznicki, Wylam; and American Legion Match, John Crenshaw, Greenville.



## NIAGARA INDOOR PISTOL MEET

**T**HE First Annual Niagara Frontier Indoor Pistol and Revolver Championships were held at the range of the Buffalo Revolver and Rifle Club, Buffalo, N. Y., on April 25th and 26th. The inspiration for these matches was found in the tremendous success of The Niagara Frontier Smallbore Rifle Championships in January, the pistol division of the B. R. R. C. decided to present the same opportunity for match competition to the pistol and revolver enthusiasts in Buffalo and surrounding territory.

Accordingly under the supervision of President Eschelman, Captain Paul Shepherd, A. N. Tuttle, and lighting experts of the General Electric Company, the range lighting system was entirely overhauled. Walls and backstop were painted a light buff. The ceiling over the firing points was covered with a light reflecting material. Indirect lighting fixtures were installed and "daylight firing points" thereby created.

A number of mechanical innovations were devised to speed up the handling of the targets. In the absence of a target pit, a small room at one side of the range opposite the target line was substituted. Narrow frames covered with wallboard were used in pairs, each frame holding four targets. Frames were brought onto the range through a door equipped with a spring, and a release device operated from behind the firing line by the range officer. The opening of this door was the signal to the target detail that all was clear. In this manner no time was lost between strings, and sufficient frames were provided to allow the target men to keep three or four orders ahead of the firing.

Squadding and registration were efficiently handled, everything running with clock-like precision. Over a hundred entrants were recorded from fifteen towns in New York State, Ohio, Pennsylvania, and Ontario, Can. The response from exponents of the handgun was very gratifying, and the Second Annual Niagara Frontier Indoor Pistol and Revolver Championships are assured for next year. —GEO. B. YOUNG.

## FLORIDA STATE RIFLE MATCHES

**T**HE fifth annual Florida State Championship Matches were fired on April 25-26 in Winter Haven, Florida, under the auspices of the Winter Haven Rifle Club. Civilians from eleven Florida cities as well as some Marines and National Guardsmen competed. Ideal Florida weather prevailed.

Medal winners follow:

## THE NAVY MATCH

1. Lt. C. R. Allen, U. S. M. C.	90	Gold
2. K. H. Recker	90	Silver
3. R. Wolfe	89	Bronze

## WIMBLEDON MATCH

1. C. J. Riecken	98	Gold
2. E. M. Wilson	93	Silver
3. K. H. Recker	93	Bronze

## FLORIDA CHAMPIONSHIP

1. Judd Dixon	137	Gold
2. W. P. Smith	137	Silver
3. T. F. Bridgland	137	Bronze

## FLORIDA TEAM CHAMPIONSHIP

1. Winter Haven Rifle Club	446	Gold
2. Sunshine Rifle Club	442	Silver

## IMPORTANT CORRECTION

*In the story of the pistol matches held at Tampa, Florida, March 8th to 11th, as reported in the May RIFLEMAN, an incorrect statement appeared on page 23, reading as follows: "No records were broken in the Individual .45 Calibre Pistol Match, which concluded Monday's shooting. Again Askins of the Immigration Border Patrol took first place, with 276, but this did not even threaten the record."*

*Actually, Captain Askins' 276 was a new official record for the present National Match course, the firing conditions for which were changed in 1924. The previous official record over the present course of fire was 273, made by Boerem in 1935. Therefore Askins' score is three points better than the previous record, and the reference to this new record by both Colt and Western Cartridge Company in their May RIFLEMAN ads is correct. We regret the erroneous statement contained in the story.*

## MORGAN PARK SCHOLASTIC MEET

**A**N INTERSCHOLASTIC Rifle Match was held at Morgan Park Military Academy, Chicago, Illinois, April 25, under the auspices of the National Rifle Association. The matches were open to junior members of the National Rifle Association only. One hundred twenty-six individual contestants and ten school teams participated.

Major Francis Parker, Director of the National Rifle Association, was present and acted in the capacity of Chief Range Officer. Representative of the Illinois Rifle Association assisted by E. F. Mitchell of the N. R. A. acted as statisticians, range officers and scorers.

The range was equipped with 25 firing points, 10 of them being the latest 18" model X-Ring Centrifugal bullet traps, and 15 the latest 12" model traps. The lighting was excellent and traps proved very satisfactory.

The match was restricted to junior N. R. A. entries except for the Father and Son match, and results were highly commendable. It is hoped to extend this match to a two-day meet next year.

Winners of the various events included: Individual Prone, J. George, Lake View H. S., 198; Individual Prone and Standing, Grant H. Gneiss, St. John's Military Academy, 186; Prone Team, Lake View High School, 979; Prone-Standing Team, Culver Military Academy (1st team), 885; Individual Scholastic Aggregate, R. Meek, Lake View H. S., 395; Individual Military School Aggregate, Grant H. Gneiss, St. John's Military Academy, 362; Interscholastic Champion, Victor Leatzow, Morgan Park Military Academy, 188; Father and Son, G. H. Gneiss, St. John's Military Academy and G. H. Gneiss, Jr., St. John's Military Academy, 366; Girls' Individual Match, Frances Farwell, Englewood Y. M. C. A., 184.—MAJOR PAUL O. FRANSON, P. M. S. & T.

## FIFTH OHIO GALLERY TEAM MATCHES

**T**HE fifth annual Ohio gallery team matches conducted in the drill hall at Fort Hayes, April 18 and 19, by the Ohio Rifle and Pistol Association surpassed the 1934 meet in total attendance, there being 135 individuals competing on 43 different teams in the various matches.

Zeppelin Rifle Club of Akron carried away most of the honors. Besides winning the Governor's Trophy in the League Champions Match, teams representing this club placed second in the Ohio Team Championship, and high in the metallic sight division. In the Club Team Match, a four-man team, 20 shots prone metallic sight event, the Zeppelin team scored an 800 possible. The four riflemen on this team who garnered in two possibles each were V. Z. Canfield, Dave Bashline, Merle Israelson, and L. C. Barrett.

For the third straight year the National Cash Register Team of Dayton won the National Guard Trophy and the Ohio State Gallery Team Championship.

**Events:** Ohio Team Championship—4-man, 10 shots in prone, kneeling, and standing. First, National Cash Register, Dayton, 1140; Zeppelin Rifle Club (Akron) 1134; Wright Field, Dayton, 1122; Tusco Rifle Club, 1122. Class B—Goodrich Rifle Club, Akron, 1118; Columbus Rifle and Revolver Club, 1105; Richland Gasco R. & P. Club, 1103.

## NEW MEDALS FOR JUNIORS

**A** NEW course of fire that gives Junior individual and club members a chance to become full-fledged "American Rifleman" has been announced by the N. R. A. Any boy or girl who has qualified as Sharpshooter, Expert or Distinguished Rifleman in the Junior 50-foot qualification course may now graduate to the longer outdoor ranges and try for these new "American Rifleman" awards.

The new Junior course embraces three stages and a special medal is available for each stage. The first stage consists of 100 shots (10 targets) at 50 yards and each target must score 95 or better in order to be counted. Stage number two is the same course at 100 yards and the last stage consists of firing two scores over the Dewar Course, the qualifying score being 380 or better for each set of Dewar Course targets.

A folder outlining the course and picturing the new medals in natural colors has been prepared and will be mailed to anyone who requests it. Address the Junior Division, N. R. A., 816 Barr Building, Washington, D. C.

## LOUISVILLE YOUTH IS A "NATURAL"

**H**OW young Erhard Wolf, a Louisville (Ky.) high school student with practically no match shooting experience, shot his way to the top of the 15-stage N. R. A. Junior Qualification Course in five weeks is told in a letter from Instructor L. P. Aker of the Louisville Junior Rifle Club. Newsworthiness of this fine record is reflected in the generous space devoted to the feat by *The Courier-Journal* Sunday (April 19) issue.

Instructor Aker's enthusiastic letter:

"Young Wolf, prior to February 29, had fired with the local high school R. O. T. C. and had done considerable plinking with a .22 rifle, but had no other shooting experience. He joined the Louisville Junior Rifle Club on that date (Feb. 29), and began his qualification shooting on March 7. On April 11, he turned over to me the last of his targets required for his Distinguished Rifleman rating. As a consequence, I am recommending him for the entire range of junior qualifications in one affidavit.

The boy is the most natural rifle shot I have ever seen. To begin with he is as good a standing shot as any of the adults in the city of Louisville, and we have many men who are really good. Next, he is excellent in all of the other positions. For instance, he turned in a 199 x 200 prone last Saturday night to take the lead for the Ewing-Von Allmen Trophy (a trophy put up by a local dairy concern).

His shooting style is extremely rapid. In all positions, he gets his shot off almost immediately after settling his rifle to his shoulder. He fired his entire standing assignment for Distinguished Rifleman within little more than an hour with only two targets scoring low enough to require re-firing, 120 shots in an hour including time necessary to change targets.

I told a sports writer of the *Courier-Journal* about him and the correspondent (Mr. Kenneth Taylor) was delighted to write a two-column article on Erhard, which appeared Sunday, April 19.

Here's hoping his subsequent record justifies my present enthusiasm."

## FAMOUS GUNSMITH RETIRES

*James V. Howe, nationally known author and gunsmith, who for the past year has been associated with the National Target and Supply Company, is no longer connected with that firm. In the future Mr. Howe will devote his entire time to writing. Mail addressed to Mr. Howe in care of Funk & Wagnalls, New York City, will reach him promptly.*

## PENNSYLVANIA CHAMPIONSHIP MATCH INDORSED BY GOVERNOR

**T**HE Indiana (Pa.) Rifle Club will be host to Eastern small bore shooters at their range at Hamilton Field on July 9, 10 and 11. A real interesting program of well planned matches, with generous prizes, is assured all who attend.

Preliminaries and re-entries will be fired all day on July 8th, followed by a varied program of individual events scheduled on the three succeeding days. The Small Bore State Championship will be shot off here and the winner will receive the Governors' Trophy, presented by Hon. George H. Earle, Governor of Pennsylvania. The Royal Canadians (a royal group) will be here in person and they say they promise to have a stronger team than last year. Whether they are stronger or weaker, they are a fine bunch of sportsmen and their personal appearance promises to make this shoot a real event. There will be a beautiful Trophy to be shot for between the team selected at this tournament and the Canadians.

These matches will be under direct supervision of The N. R. A. Staff, and as a Registered Tournament the scores made will be considered in the selection of the U. S. Bisley Team to be sent to

England in 1937 to compete for the Pershing Trophy. Double Targets will be used at all ranges, and other new improvements on the range are in progress and will be ready for the shoot. There will be four matches that will have guaranteed prizes of cash totaling \$125.00 outside of the added percentage cash dividend. In the Camp Perry Match the winner will have the choice of an Unertl Telescope or a Free Trip to the National Matches. The second place winner takes whatever the winner leaves. Another scheduled event is a Ladies Match in which there will be special awards for the fairer sex.

Programs have been mailed to many competitors in Canada and the United States. Anyone who has not received the program may obtain a copy by dropping a card to Alan B. Salkeld, Secretary, 74 E. Philadelphia Street, Indiana, Penna.—ALAN B. SALKELD.

## PLAINFIELD CLUB TOPS JERSEY LEAGUE

**T**HE Suburban Pistol League, New Jersey's largest and most active pistol revolver league, has just completed its second annual schedule. Records were made and remade in bewildering rapidity by the Plainfield Shooting Club of Oranges. The team total record was raised from 1337 to 1402 by Plainfield in the final decisive match between Plainfield and the Oranges.

Shooting was on the Standard American Target—slow, timed and rapid—all at 25 yards. .22 cal. pistols and revolvers only were permitted in League competitions. Thirteen northern New Jersey Clubs composed the League and 167 shooters enjoyed the sport of competitive shooting during the season.

Hon. A. Harry Moore, who presented a trophy while Governor of the State in 1934, although unable to attend the final Banquet, wrote a letter of congratulations to the victorious Plainfield Club.

Lyndhurst, in seventh place, secured medals for High Class B, and the high individuals on each team were given silver medals. In all 49 medals were presented.

Capt. Amundsen besides coaching the Plainfield team into the Trophy won handily the gold high League individual award from the field of 167 shooters with a remarkable average of 288.4 for 12 matches.

Next year the Suburban League hopes to embrace 15 active pistol and revolver clubs and invites all interested clubs or shooters in the state to contact the League at 88 No. Walnut Street, E. Orange, New Jersey.

# Texas Small-Bore Meet

ON MAY 9th and 10th the smallbore shooters of Texas again successfully defended their State Championship Trophy against the onslaught of competitors from Oklahoma, Louisiana and California. Due to the fact that the shoot was "registered" and offered the opportunity of competition in "exceptionally fast company" many of the competitors traveled from five to six hundred miles to attend.

Cottages on the shore of beautiful Lake Worth near the Shady Grove Range of the Fort Worth Rifle and Pistol Club had been reserved for the visiting riflemen and by the afternoon of May 8th most of the cottages had been filled and others continued to arrive throughout the night.

The first Match on the program was the Two-Man Team Match consisting of 10 shots at 50 yards and 10 shots at 100 yards per man, any sights, in which R. C. Pope of Dallas, Texas, and John Adams of San Francisco teamed up and made the winning score of 399 x 400.

Following the two-man event was the Koen Jewelry Co. Trophy Match consisting of 20 shots at 100 yards; metallic sights, captured by A. L. Knight of Fort Worth with a possible 200. Walter S. Bennett of Fort Worth won the tyro medal with 198.

The third match was for the John Callan Trophy—30 shots at 50 meters, metallic sights—ground very damp from heavy rains the day before—sun as hot and bright as only a Texas sun can be—mirage? well, what do you think! and just enough breeze with a feminine disposition to make things really interesting. And how things did happen! Twelve of the competitors fired on targets other than their own—this was the double target system's first real tryout in Texas and its value was proven beyond a doubt to the satisfaction of all. Another thing worthy of notice was the fact that upon investigation it was found that in every instance where a competitor had fired on the wrong target, he was using one of those beautiful colored transparent discs which is so often included with the more serviceable apertures for the front sight. In fact every man who used one of those lovely gadgets was guilty of firing at least one shot on the wrong target and not a single man was guilty of such an offense who did not use such a disc. And now twelve smallbore nuts (the author is included) are hoping some wise rational person will write an article for the *RIFLEMAN* explaining the why of it all. R. C. Pope placed first with a 297 x 300 while Gene Farren of Houston received second honors with

the same score. Roy H. Crosby of Dallas annexed the tyro medal with a 294.

The last match of the first day was 20 shots at 50 yards and 20 shots at 100 yards—any sights—for the Jesse Raven Trophy and was won by Marvin Hudson of Wichita Falls shooting a 400 possible. And so ended the day! With A. L. Knight six points ahead of his nearest rival for the Grand Aggregate and the Championship crown.

Promptly at 8 o'clock the following morning firing commenced in the G. W. Reid Trophy Match, 30 shots for record at 50 yards with a cold gun and no sighting shots allowed—any sights. McLeod Greathouse winning with 300 and 25 x's, one x short of his winning score of the previous year, and incidentally, being the only contestant to successfully retain possession of a trophy won the year before. As usual possibles were plentiful in this event but such scores did not count in the Championship Aggregate.

The following match was the individual Dewar for the Wolf and Klar Trophy. And this was where the big blow-up came. As mentioned before, up to this point Knight was leading the field by 6 great big points and the more timid and less experienced had just about conceded everything to him. But the pressure was too great. He had made the mistake of reading the Sunday morning paper which carried four large photographs in the sporting section concerning the matches with his name emblazoned across the headlines as leading and expecting to win. Well, to make a sad story short, it was just too much. The pressure was too great and the inevitable happened. Knight dropped five points, allowing J. R. Martin to win on his fine score of 399. Roy Crosby took the tyro with 396.

And then came the "separator." The Randle Brothers Trophy Match. 20 shots at 50 yards; 20 shots at 100 yards and 10 shots at 200 yards. S. E. Pipes, formerly of Pampa, Texas, but late of Monroe, La., came through with a new record for this match, 499 x 500, having lost his only point at 200 yards. A. R. Martin won the tyro medal with 495. And here was where Knight lost five more points.

The last match to be fired was for the Trinity Rifle Club Trophy and consisted of 20 shots at 200 yards—any sights. Paul Farren of Houston, and Maj. W. B. Wilson of Ardmore, Okla., tied with 199 and 9 x's each. They chose to decide the matter by a flip of the coin and young Paul was the lucky one. W. S. Bennett won the tyro with 197.

When the scores were all in and the

totals were all added it was found that Thurman Randle had won the Grand Aggregate with the score of 1981 x 2000 thereby regaining the crown which he lost to R. C. Pope in 1935. And again the old master had proved his consistency. Winning only a single second place in the six matches comprising the aggregate, he nevertheless came through in the final count and carried off that most coveted of all Texas Trophies, the Championship Aggregate. Randle also won the American Rifleman Trophy for the overall Aggregate.

One of the most enjoyable features of the Match was the presence of C. B. Lister and the shooters of Texas and her neighboring States are duly grateful to the N. R. A. for making it possible for him to visit with us on this occasion. We also thank him for his services in assisting C. F. McCubbin in the scoring and handling of the statistical office and hope that we will again have the pleasure and honor of his presence. McLEOD A. GREATHOUSE.

## ILLINOIS STATE MATCHES

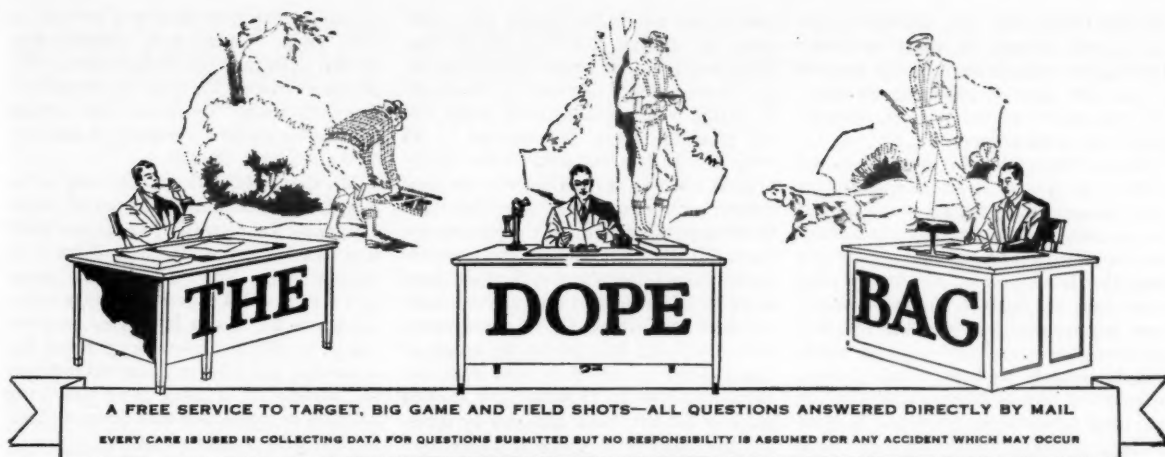
MILAN (Ill.) riflemen shot consistently to win the annual "Tribune" trophy match conducted by the Illinois State Rifle Association. They rolled up a team aggregate of 4559 points, thirty-one points ahead of the runner-up, Chicago Rifle Club. Third place was captured by the Federal Reserve Bank police; fourth by Franklin Rod & Gun Club and fifth by Austin Rifle Club. Conditions specified any sights. Firing was in prone, kneeling and standing positions.

Al Freeland, transplanted Chicagoan who now resides near Milan, was high gun of the match. He scored 1150 out of a possible 1200 points. Other top scores included: Clark Luther, 1144; K. Smith, 1144; H. E. Potter, 1141 and M. Dinwiddie, 1141.

Hyde Park "Y" Rifle & Pistol Club of Chicago in tenth place was winner of the medals for the high team firing iron sights. Federal Reserve Bank police were second in the iron sights division and the Humboldt Park Rifle Club's fourth-place third. Don Wilson of Hyde Park was winner of the medal for iron sight shooters with L. W. Mason of Aurora second.

C. A. Norris demonstrated his versatility with hand guns by winning a 20-shot timed fire match for .22 cal. pistols and revolvers. His aggregate of 192 gave him a five-point margin of victory over R. Schilke. R. J. Colseth was third with a 186.—SHERWIN MURPHY.





Conducted by F. C. Ness

## Gravity Powder Measures

**G**RAVITY-FEED powder-measuring machines are a very useful part of any handloader's equipment. On an up-and-down or back-and-forth movement of the operating handle such machines measure by volume and drop a bulk charge into cartridge case or charge tube with great uniformity. With any of them the uniformity is adequate for reduced loads or midrange loads, but not for maximum loads which require individual weighing.

With true bulk powders, including black powder, Semi-smokeless, Bulk Shotgun smokeless and the obsolete Scheutzen smokeless and Rifle No. 1, the gravity measure is at its best and equals the practical uniformity or load-accuracy of the powder scale or beam balance. With other bulky propellants which are comparatively soft or fine in grain the machine measure makes weighing of charges unnecessary. In this latter category may be placed reduced rifle loads of No. 80 and No. 75 and gallery loads of pistol powder No. 5. In the next class the measure is also sufficiently uniform to supplant the powder scale for measuring midrange or moderate rifle loads of finely cut military powder. In this class are included 1186, 1147, 1204 and 2400 powder. Even with coarse propellants (or long-cut powder) which require individual weighing, such as 1185, 17½, HiVel No. 2 and 3031, the powder measure is useful for expediting individual weighing by throwing approximate charges on the pan of the beam balance or powder scale.

The gravity measures we have tried are the Ideal, Bond, Belding & Mull, Truhon and Comer. In all but the last the cavity for measuring the small volume per charge is adjustable, and the desired charge is

obtained by moving and locking a graduated slide or by turning a screw and reading the adjustment on a dial scale. A table of adjustments for all popular propellants is furnished with each measure, but we have never found any such tables absolutely reliable. Also the exact weight of charge for a given adjustment varies from day to day, for different operators and for different lots of the same powder.

This means a powder scale or beam balance must be used in adjusting the measure for throwing any desired load. Since the weighing chore is inescapable the worth of the fine micrometer adjustments used on some measures (outside of their convenience) is open to question. The Comer, like the powder loader of the Star Progressive Loading Machine, is non-adjustable, the weighing and adjustment for a single specified charge being, in this case, done by the manufacturer before the machine is shipped. With these non-adjustable measures the reloader must take what he gets from day to day or from time to time.

We have found all the above measuring devices practical in the matter of adequate accuracy and uniformity. To get uniformity any machine measure must be operated uniformly, by which is also meant a uniform beat, stroke or timing. The knocker for jarring loose clinging kernels from the machine funnel and nozzle must be struck uniformly. The hopper should not be struck at all or the powder will settle with each little jar and cause a varying density at the bottom of the hopper.

When an automatic knocker is employed greater uniformity may be expected

by the beginner only, not by the seasoned operator who has developed a technique of uniformity. When the knocker (automatic or otherwise) is regularly bumped against the hopper, at least 50 charges and preferably 100 charges should be thrown back into the hopper until a uniform density has been obtained. In my opinion it is advisable to not jar the hopper or powder supply at all or, at least, as little as possible.

The Comer and Star hoppers funnel the powder supply to a narrow outlet agreeing closely with the size of the measuring cavity. That is an advantage. The Truhon gang measure uses a distributor to keep a uniform supply of powder of uniform density directly over its series of six outlets. This advantageous effect can be approximated in the Ideal measure by using a large funnel in the top of the hopper to split the powder supply and thus maintain a uniform operating volume and uniform density. The Belding & Mull measure goes further than its contemporaries in this by using its stationary hopper merely for the reserve supply and its smaller movable magazine for the operating supply of powder. The two are connected by a small opening which is offset to assure a uniform volume for every load, and very uniform density results.

This I believe is the feature which makes the B. & M. for all types of loads and powder the most accurate gravity measure we have tried. The difference is slight, however, and scarcely discernible with small loads of pistol powder, although appreciable with rifle loads of the second class and especially so with coarse propellants which do not feed as uniformly through any gravity measure. We had

noticed, before, the fine uniformity obtained with several of these machines. The last one, just obtained for the purpose of this test, proved to be no exception and was no more and no less accurate than those tried before.

Every reloader has his own ideas and preferences relative to gadgets, tools and equipment and this personal equation must be considered in judging published tastes and opinions. For example, when we tried the Bond powder measure several years ago we thought the adjustments were inconvenient and disliked the way certain coarse propellants, such as Lightning, hung up in its rather abrupt funnel. Although it was probably as accurate as our Ideal measure we preferred to stick to the latter. The Truhon six-nozzle gang measure seemed as accurate and uniform as the average measure when we tried it, but we were not particularly interested in six-to-one powder-throwing and preferred to stick to our old reliable Ideal No. 6 measure.

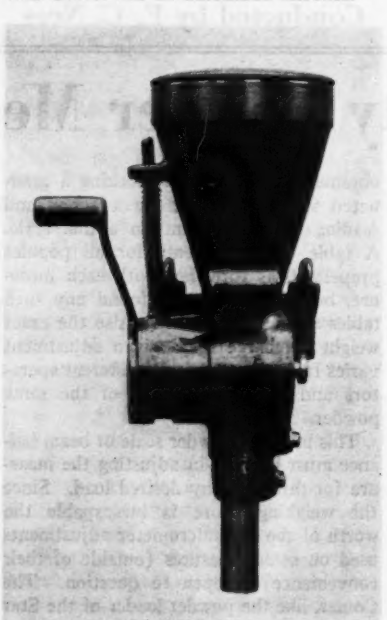
The Ideal powder cut-off with its square edges is far from ideal, but it has served us well for years. For rifle loads of coarse propellants it is an old trick to make a solid measuring plug for it out of 1¼-inch brass rod and then drill a round hole for the powder cavity. The size of the drill or the depth of the hole determines the capacity, of course. This round hole in the round rod forms a curved or more gentle cutting edge, superior to that used on any measure other than the Comer or Truhon which both use this cut-off principle. The Truhon capacity is adjustable by means of movable cylindrical plungers in the bottom of each cavity, all six being controlled in unison by means of a screw and graduated dial in the end of the plug. The Comer cavity is fixed and non-adjustable, a new measuring plug being required for a second, different capacity.

### Comer's Precision Powder Measure

Paul Comer, Narberth, Pa., entitles the already-mentioned Comer measure, "Precision," because he is confident it is the most precise powder measure available commercially. We found it very accurate indeed, but we have kept it long over time and have spent too many futile hours trying in vain to equal his own results. We have accordingly reached the inevitable conclusion that it is sensitive to operating methods and that it demands of the purchaser the development of the ideal technique of operation to insure any unusual accuracy or uniformity beyond the capacity of other gravity measures.

Mr. Comer suggested a beat or timing of 30 to 45 thrown charges per minute. We tried this by checking with the second-

hand of our watch, but did not get a sufficient or material difference except that when increasing the tempo to a charge per second we noted a decrease in the weight of charge which indicated our speed was too great to permit the measure to fill properly. In fact, our results were equally as good when using the Comer in the same manner as other measures, or at slow time. Speed is possible with the Comer measure because it has a left-hand operating handle for an up-and-down stroke, the right hand being left free to hold and guide a loading-block containing 50 prepared cases, each case being held under the nozzle in turn. This can be done also with the Ideal measure by holding the loading block in the left hand, and also by ignoring the knocker if speed is paramount. The Comer has an automatic knocker.



THE COMER MEASURE

Since the Comer measure has a hopper-jarring knocker, actuated by the operating handle, Mr. Comer suggested that, especially with the coarser propellants such as Unique, the hopper should be filled two-thirds and at least a hundred charges should be thrown in order to settle the powder well before taking any weighings. It does not take long to do this if a canister is held under the nozzle, but some reloaders may object to this added chore. After throwing a number of charges of Unique to get the powder settled Barr threw 50 charges of Unique, in rhythm, using the loading block. Weighing these in order gave an extreme variation, in the first ten, of 0.10 grain. In the second ten, 0.10 grain. In the third ten, 0.15 grain. In the fourth ten, 0.15 grain. In the fifth ten, 0.10 grain. The extreme va-

riation in the first fifty was greater, or 0.20 grain. Twenty-five charges were thrown separately for further check. The extreme variation for these 25 charges was also 0.20 grain. What we were striving for was an extreme variation of not over 0.10 grain with Unique.

Mr. Comer informed us the plug of the sample measure was calibrated to throw 4.4 grains No. 5 powder, 4.8 grains Bull's Eye and 5.3 grains Unique. With it we got 4.4 grains No. 5 powder, 5.1 grains Bull's Eye and 4.6 grains Unique. Also 4.8 grains No. 6 powder. This variation caused by different operators different lots of powder and different locations indicates the advisability of using powder scales or balances in connection with powder charging and with powder measures.

For ten listed weights of charges with each of three propellants Mr. Comer got an extreme variation of only .03 grain using No. 5 powder, of only .05 grain with Bull's Eye and of 0.10 grain with Unique. We ran the other two propellants through the Comer measure exactly as we had tried Unique and obtained the following extreme variations:

Series	Bullseye	No. 5	No. 6
1st 10.....	.15	.10	.15
2d 10.....	.05	.10	.10
3d 10.....	.10	.10	.10
4th 10.....	.10	.10	.20
5th 10.....	.10	.05	.10
1st 50.....	.15	.20	.20
Odd 25.....	.15	.15	.20

Without changing the powder in the hopper we continued with each propellant this time discarding the cases and loading block and instead using a slow time and throwing the powder directly on the pan of our scales. Thus we weighed fifteen successive charges with each powder before starting a new one. In this series of 15 charges we got an extreme variation of 0.15 grain with Unique, of 0.10 grain with Bull's Eye, of 0.10 grain with No. 5 powder and of 0.10 grain with No. 6 powder. These were our best results with all propellants and we considered such uniformity satisfactory, although it did not equal that which Mr. Comer obtained,—presumably, with this same measure.

Accordingly, we ran 25 charges of each propellant through our Ideal measure using the same amount of the same powder and the same adjustment and the same operator as a check test. With the Ideal measure adjusted to throw 4.4 grains No. 5 powder it threw 5.1 grains Bull's Eye, 4.45 grains Unique and 4.6 grains No. 6 powder. The extreme variation for 25 charges was 0.15 grain with No. 5 powder, 0.20 grain with Unique, 0.20 grain with Bull's Eye and 0.20 grain with No. 6 powder.

Not having one, we procured a new B. & M. Visible Powder Loader for fur-

ther check. We started right out with 4.4 grains No. 5 powder. The first three charges ran .05 grain light making an extreme variation of .05 for the first ten charges. The final ten were more uniform, giving a scant .05 grain variation, with a total for all 20 loads of .05 grain. With Unique the same adjustment gave 4.6 grains. The first ten gave less than .10 grain extreme variation; the next ten, fully .20 grain. All twenty gave .25 grain variation.

We then transferred the Unique powder from the Belding & Mull hopper to the Comer hopper, making the latter two-thirds full. The first ten charges gave an average weight of just under 4.7 grains with an extreme variation of 0.40 grain. The next ten averaged a bit over 4.6 grains with a variation of 0.20 grain. All twenty gave an extreme variation of 0.40 grain. In this check we used it exactly like the B. & M. measure, merely for direct comparison.

Now to get averages with Unique by using the speed recommended we threw ten charges in succession on the pan at the rate of 45 per minute as suggested by Mr. Comer. These combined charges would, of course, serve to equalize any variations between high and low charges and we looked for very uniform averages in this series. The first five groups of 50 charges thus thrown ran from 44.40 to 45.25 grains for a variation of 0.85 grain. The next 50 charges varied from 44.15 to 45.00 grains for a variation of 0.85 grain. This is an average of .17 per charge.

Our conclusion is that Comer's Precision Powder Measure is in truth a precision measure, and as accurate as any we have tried for light loads of pistol powder. Because of its limited capacity we have not tried it with rifle loads of coarser rifle powder, which is quite another matter. The Comer measure is also one of the most speedy and most convenient gravity measures we have tried.

cheek and required a shot of antitoxin serum for protection against lockjaw.

While such accidents may be rare, they come without warning, and no one can foretell whether or just when he will be next. Fortunately, the most vulnerable part of the face is easily and adequately protected by any ordinary pair of spectacles. Special glass is not required for safety. Shooting glasses are better, but not because they are stronger. They have larger lenses and cover a greater area. Also they are designed for greater comfort and visual efficiency when used at the angles peculiar to the various shooting positions. Shotgun shooters add side shields or have extra wide curved lenses to guard against entry of powder particles from the next station or against rebounding shot pellets which may arrive from the side or other directions.

### Choose Colors Carefully

A shooter should be careful about selecting tinted glasses and it might be advisable to consult a doctor, providing one who understands color effects on individuals can be found. Some tints are depressing while others have a stimulating effect on various organs of the body. Individuals react differently to colors according to their make-up, and some may safely indulge the stimulus obtained from yellow, amber and similar tints, while others are so constituted they must be confined (for habitual use) to a green, blue or darker tint, or one which transmits light rays with a different frequency, velocity, wave-length or whatever makes the difference. There is no doubt that a real difference in color-reaction exists in individuals, often to a degree which is serious if not dangerous. While not generally known or at least not commonly recognized, this is so true that the only safe tint to choose blindly or as a random selection without benefit of special individual study is the shade known as neutral smoke. Neutral smoke is not used by shooters, because its only purpose is to remove glare. For shooting we need more light.

### Shoot Safe Specs

In January, Walter E. Lytle, 2015 Wascaua Avenue, Lakewood, Ohio, sent in two pairs of Shoot Safe Specs. I took them with me to the rifle and pistol shoot at St. Pete and Tampa where they seemed to arouse the interest of the boys. Because I need no correction both were Plano glasses, or without prescription. One was of medium weight in Noviol glass which is a yellow tint like the well known Rifleite but appreciably brighter. The other was an extra heavy heat-treated Calobar glass of a blue-green tint.

Most shooters prefer the yellow color because it gives such excellent contrast

## Eye Protection

**S**HOOTING glasses or spectacles are a nuisance. They fog over in cold weather, and they must be wiped off frequently or protected by a sweat band in warm weather. They are in the way often and cause discomfort to the ears and nose. They catch in things and are stepped on or become lost or broken. The cocking knob shatters the lenses sometimes in rapid fire practice. Undeniably they are nuisances of the first degree to shooters. But in spite of all that can be felt and said, they are blessings, of the greatest importance to shooters.

In my Dope Bag letters to members I have consistently recommended the wearing of shooting glasses, spectacles or goggles as a wise measure of eye protection, especially when shooting rifle handloads or high velocity rimfire ammunition. From time to time I have inserted this same caution as a published warning in the Dope Bag columns. It is sound advice and I consistently follow it myself. On a number of occasions glasses have saved my eyes from injury. To think how serious certain accidents might have otherwise been makes me shudder at the mere thought.

At one time, before nonmercuric Klean-bore had followed the earlier plain Klean-bore, I was shooting a standard and very popular clip-loading rifle and small-bore cartridge. The former cost about \$35.00 and the load was a standard .22 Long Rifle smokeless cartridge of the regular-veloc-

ity type. I believe the mercuric primer composition had weakened the head of the rimfire case, because it let go and blew out the magazine with a grand display of violence and scattered its component parts over the floor of the indoor range.

Since then such accidents have become more frequent and more violent, if not more serious, because of the introduction of high velocity loads. Improperly-supported case heads let go, brittle rims crack, or heads too thick or too thin are punctured by the firing pin in improper rifles, and gas comes back to the shooter's face and eyes carrying minute particles of metal and powder with it.

### Wear Glasses, Always

Such primer punctures also occur with center-fire primers and especially with handloaded ammunition and in altered or remodeled rifles. In decapping live, unfired primers I have had them let go and shatter violently like miniature bombs. In handloading, sometimes excessive case-sizing or chemical reactions from the primer fouling or from acid cleaning baths weaken brass cases or render them brittle. When these weakened or brittle cases let go in the chamber under heavy pressure the only thing that could save the shooter's sighting eye (or both of them) is a pair of glasses. I had such a brittle case (in .250 Savage caliber) let go last summer. My eyes were protected, fortunately, but I had a cut



between sights and target and makes the black stand out, so to speak. The sample Noviol specs proved to be the brightest pair of yellow glasses at the St. Petersburg shoot. Mark Cooper and Charley Hamby tried them on the range. Mark liked them and at least equalled his highest scores when using them although they were not ground to his prescription. Hamby, on the other hand, did not like them as well because he found that bright tint annoyed him. More about this later. There were dark cloudy and rainy days in Florida and these Noviol specs transformed the gloom to sunshine in effect. They irritate my eyes as does any yellow tint, but Barr likes them and gets good results with them in his test shooting. On overcast days these yellow (Noviol Plano) glasses seem to improve his vision and thereby give him smaller groups.

The heavy Calobar specs apparently screen out some of the irritating rays but they seem to cut down too much light to suit the majority of shooters. The very thick glass as used in this sample would assure anyone of ample protection even against large bits of brass or perhaps against glancing blows of fine shot. However, I do not think that darker shade will ever become as popular as the yellow tint, and many shooters will object to the very heavy weight of that thick glass.

My King glasses are much lighter in weight than the yellow pair sent in by Mr. Lytle, and his thick Calobar specs are appreciably heavier. From the standpoint of weight they are comparatively uncomfortable to wear. The blue-green tint is suited to some eyes and certain temperaments. It is more suitable for my nervous make-up than any yellow tint.

Both samples as sent in by Mr. Lytle are very well made and attractive in appearance with large, round, curved lenses. These Shoot Safe Specs are high-grade shooting spectacles and the prices are reasonable. I believe the round shape of the lenses and the bridge construction are better adapted for pistol shooting and shotgun work than for rifle shooting in prone position. However, we and other shooters have tried these samples for several months now, almost exclusively from the prone position and they have been very satisfactory. Mr. Lytle informs us that A. E. Hart won the Ohio State Skeet Championship while wearing a pair of these glasses.

The Calobar specs of heavy hardened glass cost \$6.00 in Plano, and the regular strength Plano Noviol specs cost \$7.50. When either color is ordered ground to the shooter's prescription the price is \$9.50.

#### Tru-Site Skeet-Glas

W. H. Belz, Inc., 2 East 44th Street, New York City, are opticians who feature

shooting glasses. I like their Skeet-Glas as equipped with Tru-Site lenses very much indeed, and believe they should satisfy the most exacting shooter. The frames, of a shell-like material called Zylonite, is shaped drapingly, or in a snug sweep, over the nose. This assures comfort and maximum coverage. This idea is carried further by the curved sides which extend beyond the eyes. The curved lenses fill this entire area, clear up to the bridge of the nose, to give a wide angle of vision which represents the maximum range possible in any glasses of any design. Comfort is furthered by the light weight of these glasses.

The Tru-Site lenses are tinted a combination yellow and green. The yellow of the blend is for intensifying the light and for promoting vision by affording sharper contrasts, while the green is for eliminating ultra-violet rays and for cutting down glare. The ones I tried are without prescription and as yet the color has not irritated my eyes as does plain yellow or amber. Apparently Tru-Site is a favorable blend. The price is \$9.50 in Plano or \$10.00 more when ground to the shooter's prescription. The Skeet-Glas is sold on a 15-day trial basis, which is an excellent plan.

The Tru-Site lenses are of correctly ground high grade optical glass, annealed for maximum tensile strength, with the idea in mind of stopping a ricocheting shotgun pellet or bits of brass case or primer metal from a burst cartridge.

My suggestion in buying shooting glasses is to first select a tint and then order a pair for trial without prescription. Then try these for fit and color and also, if practical, over regular spectacles which have the required grinding or prescription. Then the shooter will be better qualified to determine and describe his exact requirements in detail.

#### THE M-71 IN .348 CALIBER

THE modern version of the 1886 Winchester in the new .348 Winchester caliber is a short, handy, lever-action repeater which is powerful at the muzzle and perhaps sufficiently so at 200 yards to prove effective on any American game. Now the question arises, "Is it sufficiently accurate at 200 yards?" Our repeated tests find an affirmative answer to that question.

The following table shows what the factory data announced as expected accuracy and what we got in our first tests using the M-71 sample rifle with peep and bead sights as issued and shooting from sitting position as a careful shot would do in the woods when terrain and cover permit.

#### 150-grain bullet (2920 f.-s.)

	25 yds.	100 yds.	200 yds.
Expected.....	0.8"	3.0"	6.5"
Obtained.....	0.5"	2.0"	5.9"

	200-grain bullet (2535 f.-s.)		
Expected.....	0.9"	3.5"	7.5"
Obtained.....	0.6"	5.0"	8.5"

Since then, at 200 yards, I have fired from sitting other groups as large as 13 inches and as small as 5½ inches. Barr and I have fired it prone without much improvement even after fitting a blade front sight. Finally, we fitted the 3X Malcolm XXX model scope sight and learned, too late, it gave its best accuracy from the prone position, but without the sling. By that time our supply of ammunition was exhausted. The next best position I found was sitting with tight sling, but that position introduces too much human error and uncertainty.

At 200 yards including every shot fired from sitting and prone, with bead and scope and with and without sling our average 10-shot group for eighty shots was under 10 inches, or 9.90 inches, all groups measured center to center. Our biggest 10-shot group was under 14 inches, or 13¾ inches and that includes both loads. Our smallest 10-shot group was under 7 inches, or 6¾ inches. We also had in the above two "fliers" or accountable wild shots which are included. Recognizing these two shots (one with each load) we had a 9-shot group with the 200-grain load in 7¼ inches and a 9-shot group with the 150-grain load in 5¾ inches. These two groups are better than the "expected accuracy" for the respective loads. Furthermore, those two fliers were first-shots of each group.

From sitting with the bead sight my 10-shot groups were 10½ inches with the 150-grain load and 13 inches with the other load. From prone our 10-shot groups were 10½ and 10 inches, respectively. With a blade front sight our combination group from prone was 13¾ inches. With the scope our groups were 6½, 12¼ and 9½ inches. We also had 5-shot groups of 4¾", 5¾", 5-15/16", 6¾", 7¾" and 7¾" inches at 200 yards with the 150-grain load including all sights, all positions and both shooters.

If we had confined our shooting to this 150-grain load our average as reported above would have been better. The 200-grain load did not equal the 150-grain in accuracy and our 5-shot groups with it were nearly as large as our 10-shot groups. During one of our sessions on the 200-yard range three of us fired 20 shots from three different positions into a round group with an extreme spread of 13 inches for all shots fired which would indicate a fairly constant zero for the M-71 and that it is a practical big game rifle up to 200 yards. Set at "200 yds." the zero with the factory peep was correct for me at that range.

#### THE AMERICAN RIFLEMAN

# New G. & H. Mount and Rifles

**G**RIFFIN & HOWE have, in the last couple of years, improved their low-model double-lever bracket mount for high-grade, big-game, hunting-type scope sights. This mount (quickly and conveniently and accurately attached to its permanent base on the left side of the receiver) brings the scope over the axis of the bore and holds it in the lowest possible position, as is proper to make any hunting scope efficient and effective. The permanent base is well fitted and rigidly held to the side of the receiver by several screws and pins. The mount slides on, to a stop, and a quarter-turn down of both levers locks it solidly and accurately in place without affecting the zero. The base is a long shelf and the locking levers are widely separated for maximum strength and security. While the base has deep contact with the receiver the top of the stock is left uncut and its lines unmarred. This mount is strong and reliable.

The hunting scopes all have internal adjustments for elevation, requiring only windage adjustment in the mount. The new G. & H. micrometer control of windage is very good. A large knurled screw on the rear end of the mount is slotted accurately for a silver quarter. Its sleeve is plainly graduated in minute of angle units, or easily-read inches-per-hundred-yards. It is solidly locked or released for deliberate changes by a screw in the end of the mount. We found these adjustments accurate and reliable. The elevation marks on the boss of the Zeiss scope, however, did not give us exact minutes, but about 1.3 minutes per graduation. This mount costs \$30.00 plus installation.

## Converted M-30-S and M-17 Rifles

The first G. & H. job we tried was a Remington Model 30-S converted to .300 Holland & Holland Magnum caliber and equipped with a big Zeiss Zielvier 4X scope. This work is done on any customer's Remington M-30 bolt-action or Model 1917 rifle. Other available Magnum calibers are the .280 Dubiel and .375 Magnum.

The only noticeable change in the rifle was a neat job of slightly lengthening the magazine for the longer Magnum cartridge, of which it held four. Several sharp angles were also relieved or rounded to facilitate loading and feeding, and the floor plate was cut out about  $\frac{1}{8}$ -inch to clear the belted head of the Magnum case. The bolt stop was not changed as the increase in overall required is but 1/16 inch. However, the magazine was lengthened  $\frac{1}{4}$  inch as noted above. The follower was not lengthened.

The Zielvier scope has an enlarged eye-piece,  $1\frac{1}{2}$  inches in diameter, but it was mounted low so that the bolt handle, when raised, cleared it by  $\frac{1}{8}$  inch on the bottom and  $\frac{3}{16}$  inch on the side. The eye-relief was  $3\frac{1}{2}$  inches, and as issued to us the eye-piece was  $\frac{5}{16}$  inch back of the center of the rear tang screw over the small of the grip. This scope position suited Barr and myself, but one military marksman, who tried it for us at 600 yards, found it too close for good shooting. As a consequence his eye-brow was badly cut and he got only four out of ten shots on the target. Upon examination we found we could release the clamp rings and move the scope in the mount forward  $\frac{3}{8}$  inch or backward  $\frac{5}{16}$  inch. However, for our own shooting we left it as it was.

The position of the big Zeiss scope just above the Remington receiver gave a drop from the sight line of  $2\frac{1}{8}$  inches to the 30-S comb and  $1\frac{1}{2}$  inches to the bore axis. The rifle weighed  $8\frac{3}{4}$  pounds without scope and  $9\frac{3}{4}$  pounds with scope. This good weight, the moderate drop and a good  $3\frac{1}{2}$ -pound trigger pull favored good shooting. Mr. Johnstone had informed us the accuracy was uncertain because this particular rifle had not been tested before shipment to us. We were anxious to try it, of course. All we had in .300 Magnum caliber was some Western 220-grain boat-tail ammunition, loaded to 2550 f.-s.

## 100, 200 and 600 Yards

At 100 yards our impact was 14 inches above aim, and the group including the first shot from an oily and cold barrel measured only  $1\frac{1}{2}$  inches. We were disappointed, however, at 200 yards with two 5-inch groups, and blamed the picket-top post which neither of us liked as we could not maintain uniform elevation with it. The impact was 28 inches high at 200 yards, which we figured would be nearly right for 600 yards. Our first shot at 600 yards was high enough but a yard to the left. Six minutes right windage or six marks on the G. & H. windage sleeve brought the group right over the bull. Our group measured  $13\frac{3}{4}$  inches or slightly over 2 minutes of angles which was neither good nor bad. By ratio that equalled 6.88 inches at 300 yards and 4.58 inches at 200 yards, agreeing with our 5-inch groups at that range.

## The Second .300 Magnum

Another similar rifle was obtained from Griffin & Howe. This was also a 30-S Remington converted to .300 Magnum and equipped with Zeiss Zielvier scope sight and the new G. & H. low-model mount. This 4X scope had a medium fine cross-

hair reticule without post or bars. It was mounted still lower, the  $1\frac{1}{8}$ -inch front end being only  $\frac{3}{16}$  inch above the barrel. With bolt handle raised the big eye-piece was cleared by  $\frac{1}{16}$  inch at the bottom and  $\frac{1}{8}$  inch at the side. The drop from line of sight to the Remington comb was less than 2 inches.

This scope, of course, had the same eye-relief but its position was different, the eye-piece being farther back than the other, or  $\frac{3}{4}$  inch behind the center of the rear guard screw. It could be shifted forward in the mount only  $\frac{1}{8}$  inch, and backward  $\frac{9}{16}$  inch. This gun, scope and mount weighed the same as the first outfit and so did the trigger pull. This rifle was also equipped with the Lyman 48-R receiver sight, slide removed, of course, to permit low position of the scope sight. We used the same ammunition in this rifle over the same ranges.

At 100 yards our group was 2.13 inches, probably on account of a cold barrel and a slightly wild first shot. That group represented the average accuracy obtained with the first rifle, but we expected more of this one, and got it. As on the other Zeiss scope the elevation turret was set on the second mark, but this one shot a foot lower at 100 yards. Our two groups at 200 yards were both  $3\frac{3}{8}$  inches. Our 3-shot zeroing groups at that range were good, being  $3\frac{3}{4}$ ,  $2\frac{3}{8}$ ,  $2\frac{1}{4}$  and  $3\frac{1}{4}$  inches. Finally elevated to the twelfth mark the impact was about 28 inches high at 200 yards in agreement with that of the first outfit. At 600 yards we had to elevate more, or to 16, on account of the lower position of the scope and perhaps because of a different angle of departure for this rifle.

Our groups were 10-11/16 and  $11\frac{1}{4}$  inches at 600 yards, for an average of 10.97 inches. That is less than 2 minutes of angle, or just 1.75 inches per 100 yards. By ratio that 600-yard average for this rifle would equal 5.48 inches at 300 yards and 3.66 inches at 200 yards, which latter agrees closely with our groups at that range.

## The .300 Magnum Cartridge

The 220-grain load we were using developed 2550 f.-s. and 3180 ft.-lbs. at the muzzle. The velocity falls off to 2295 f.-s. over the first 100 yards. It has practically a two-foot trajectory rise midway over 500 yards. At 600 yards it seemed comparatively slow. We could plainly see the air-wash and Lubaloy-flash of this bullet in flight with the big 80-mm. Bausch & Lomb team scope, which took in more than five targets in its field of view even with the 32X eye-piece. We had two lots of cartridges, one box apparently being old and slightly deteriorated. This would chamber with an appreciable difference and would stick upon firing, causing two ex-

traction failures. Also most of this older lot leaked gas around the primers. It seemed to shoot as well as the fresh lot but it also seemed to develop higher pressures, probably on account of some slight difference in seating, chamber-fit or effective headspace.

#### The Pachmayr .30-'06

The third rifle came from California instead of New York, but it also was a 30-S Remington and had the G. & H. low-model mount and Zeiss scope. This one was installed by Frank Pachmayr, 1232 S. Grand Avenue, Los Angeles, California, who is rightly proud of his specialty work in fitting, fashioning and fastening permanent bases for practical hunting scope sights. This job was as good as the one he previously did for me in attaching my Noske scope sight on my M-54 Winchester. Pachmayr makes a long special base to exactly fit the left side of the receiver and then solidly and rigidly fastens it with tapered pins so that no inaccuracy results from invisible play or unappreciable movement of the base. He has, in fact, succeeded in improving the grouping ability of more than a few of such outfits by this excellent specialty service in fitting scope bases.

This third Remington 30-S was in standard .30-'06 caliber and it was equipped with the Pachmayr White-line recoil absorber butt pad. The Zeiss scope was the 2¼X Zielklein model in the low-model double-lever, G. & H. mount. The rifle was heavier than the other two, weighing 8½ pounds without scope and 9½ pounds with the scope. The trigger pull like that of the others weighed 3½ pounds but had no slack. The small Zielklein scope has no enlarged ends and, of course, can be mounted lower than big Zielvier scopes. The drop at the comb was 1½ inches and to the bore, only 1 inch. As mounted it just clears the receiver bridge and the raised bolt handle by 1/16 inch.

We got an eye-relief of 4 inches for this scope. The position of the eye-piece was ⅝ inch back of the center of the rear tang screw. This was the extreme forward position in the mount. It could be shifted farther back by as much as 1½ inches.

This scope had a cross wire and a picket-top post (graticule No. 2). We do not like the picket on account of losing it in the black and inability to maintain even elevation. In the woods we also prefer a flat-top post (graticule No. 6). Three of us tried it at 200 yards with M-1 Service ammunition, F.A. 1929 and F.A. 1933. Our 10-shot groups ran 7¼ to 10¼ inches for the first lot, and from 4½ to 13½ inches for the second lot. Usually one or two fliers enlarged the groups to the sizes given. One 8-shot group was 5¼ inches. Three 9-shot groups ran, 4½, 6¾ and 8¼ inches. The groups with this ammunition

were in a dead heat with those obtained by the same shooters in Barr's M-1917 Sporter with Alpine stock and improved 3-30 Weaver scope sight.

#### RIFLE ACCURACY IN SHOTGUNS

**WE** HAVE been disappointed in results obtained with single-ball and slug loads in shotguns. The best results reported were those obtained by Elmer Keith in an old Stevens double-barrel. In several shotguns the factory-loaded Brenneke bullet loads did not give us the accuracy Keith reported. Because he loaded the Brenneke bullets in Peters trap loads we believed it important to do our loading. Keith got six shots in 3¾ inches at 40 yards.

#### Cutts Compensator Tried

We believed the Cutts Compensator would be ideal for this purpose because a choke could be used to fit the ball or bullet. For several years I have used the Cutts Compensator on my M-28 Savage trap gun, and I had a complete set of the interchangeable choke tubes to go with it. Accordingly, we mounted a peep sight on this shotgun. The one from the M-68 (or M-69) Winchester was readily adapted and fitted to the extreme rear end of the Savage receiver. This gave us an adjustable peep sight just ahead of the safety button on the grip of the pump gun. Now we had only the big front sight with which to contend in aiming, but that was not bad until heat waves from the barrel partially obscured it.

#### Lyman-Ideal Ball

As a foundation for all our loads we used the Western Expert Skeet Load in 12 gauge, which means 3 drams bulk smokeless. We removed the shot and substituted the single balls, bullets or slugs. From Lyman I had some Ideal lead balls, 11/16-inch diameter, which fit our .690 choke tube and some which measured 23/32-inch. These latter were fired through the .725 choke tube.

At 50 yards the 11/16-inch ball load put four out of five in 11 inches, one shot missing the target completely. In the other Cutts Choke tube, the 23/32-inch balls all (5) landed in a group of 11½ inches.

#### Bala "Atcsa" Expansiva

From Barcelona, Spain, we had obtained some special balls in 12 gauge of Atcsa brand. These had a maximum diameter of ¾ inch to fit the bore snugly but were designed for full-choke 12-gauge barrels, elasticity (compression and expansion) being provided for by a series of six regularly spaced ¼-inch holes which were about 3/16 inch deep. These balls fitted

our .725 tube very snugly. They were loaded and fired like the smooth solid Ideal balls mentioned above and gave the same degree of accuracy, or all 5 shots in 11 inches. Over the 50-yard range they made a peculiar whistling sound in flight, which was distinctly audible.

#### Handloaded Brenneke Bullets

In each case we had a snug fit of the balls in the choke of our barrel and, except for one shot out of fifteen, this suiting of ball to bore and bore to ball improved the accuracy to a practical point where all shots stayed inside a foot circle at 50 yards. For any further refinement, then, we had to use a cylindrical slug or bullet with diagonal grooves or vanes and with a tail or balancing provision for stability in flight. For this purpose we handloaded a few Brenneke bullets as Keith had done and equalled the expected 4-inch accuracy at 50 yards.

These Brenneke bullets were a snug fit in our .725 choke, but it was next to impossible to load them in those Western Expert cases. However, Barr succeeded by dint of persistent effort and by the aid of an oversize screw driver. The work was worthwhile, however, because at 50 yards three of them went into the same hole and two shots which keyholed slightly narrowly missed that same hole, to make a total group of only 2½ inches. That is the best performance we have seen out of any smooth bore and represents about all that could be expected of any rifle with similarly inferior sights.

#### Foster-Winchester Loads

Karl M. Foster, who has done much experimenting with slug loads as previously reported in THE AMERICAN RIFLEMAN, sent in some 12-gauge bullet loads of his design. The Foster bullet has a blunt round nose, diagonal grooves, and a hollow base filled with wax. We recovered a few with the lead greatly mushroomed but with the wax still intact. These loads were in Super Speed cases loaded by Winchester. They proved to be the best factory-loaded, smooth-bore, ball ammunition we have tried to date. The bullet was a push fit in our .725 choke.

At 50 yards I put 10 shots in 7¾ inches, 9 of them making a 6¾-inch group. Barr proved this by putting 9 in 6 inches, his 10-shot group measuring 8¾ inches. These loads should be practical up to 100 yards on big game, and we hope to try them at longer range for report in an early issue.

#### A VARIETY OF 16-GAUGE LOADS

**S**EVERAL months ago, because we wanted some comparative 16-gauge patterns, we purchased from Remington a full-choke Model 31 slide-action shotgun



and a representative collection of Remington 16-gauge cartridges; in all, eighteen different loads. These we fired at 20 yards and 40 yards for spread, using definite circles at which to shoot instead of drawing them around choice sections of the patterns after firing. The M-31 is chambered for 2¾-inch shells, and the standard 2 9/16-inch cartridges may be expected to spread their patterns a bit as a natural consequence of this discrepancy in length.

#### 16-Gauge Brenneke Bullets

First we tried some Brenneke bullets loaded by Winchester for A. F. Stoeger, Inc. We understand that these loads are in the process of improvement. Our shooting was from prone at 40 yards, and without rear sight.

My first 5 shots made a 10-inch group which landed 6½ inches below aim. Barr's five shots went 3½ inches low and made a 14-inch group. He had two keyholed shots. I had none. All our ten shots went into 19½ inches, eight of them in 10¾ inches. The common center of impact was 5 inches below aim at 40 yards.

#### Remington Single Ball Loads

The R. A. round-bullet loads were similarly tried over the 40-yard range. Barr's first five made 13½ inches, and his next five, 9½ inches. All ten shots grouped in 14¾ inches and the impact was on the point of aim. My impact was 5 inches below aim, but my total group agreed closely, with all ten shots in 15½ inches. Out of the twenty shots we had 9 in 10½ inches.

#### Remington 16-Gauge Shot Loads

In patterning the different shot loads we fired three shots at 20 yards for extreme spread and we also measured the dense centers. Then we fired five shots for pattern at 50 yards. After each eight-shot series we examined the bore for leading and cleaned it thoroughly before shooting the next series. Thus each load started its separate record with a clean bore.

In this matter of bore-leading the short shells were the worst offenders when loaded with soft shot. Next came the short shells loaded with chilled shot. These were followed by those loads containing coppered shot. The very least leading came from 2¾-inch shells loaded with chilled shot. Except with the last mentioned loads the best patterns usually came on the fourth or fifth shot. With the 2¾-inch loads we got as many "best" patterns on the seventh or eighth shot.

No. 1. The first shot-load tried was the Kleanbore Game Load with No. 6 soft shot. The dense centers at 20 yards measured 17, 16 and 15½ inches. The extreme spread was 22½, 20½ and 23 inches at 20 yards. Patterns were very uniform at

40 yards. For five shots the average hits were: 13 in the 8-inch center, 45 in the 15-inch circle and 104 in the 26-inch circle. The average in the 30-inch circle was practically 2 hits per 3-inch square. The 4th pattern was poorest, the 8th best. The extreme variation, maximum to minimum, was a difference of 62 hits.

No. 2. Kleanbore Arrow Express, lacquered, No. 6 coppered shot. The dense centers at 20 yards ran, 15½, 14 and 14 inches. The extreme spread, 21½, 19 and 17½ inches. At 40 yards the poorest patterns came on the 6th and 7th shots, the best on the 8th shot. The extreme difference, worst to best, was only 31 pellets. The five shots averaged 2½ hits per 3-inch square, with 25 in the 8-inch circle, 80 in the 15-inch circle and 178 in the 26-inch circle.

No. 3. Kleanbore Game Load, No. 6 chilled shot. The dense centers at 20 yards were: 14, 13 and 13 inches. The extreme spread, 18, 20 and 20 inches. At 40 yards the first pattern was best, the poorest coming on the 6th shot. The maximum difference was 41 pellets. Patterns averaged: 19 in the 8-inch, 53 in the 15-inch and 130 in the 26-inch circle. Hits per 3-inch square averaged exactly as the same load with soft shot. (See No. 1 above.)

No. 4. Arrow Express (duPont Oval) No. 6 chilled. Extreme spread at 20 yards, 20, 22 and 21 inches. Dense centers were: 16½, 16 and 14 inches. At 40 yards the average gave between 2 and 2½ hits per 3-inch square. The best pattern came on the 5th shot and the poorest on the 6th shot, with a difference of 63 pellets. The means were: 24 in 8-inches, 74 in 15-inches and 162 in 26-inches. This load did not equal the other "Extra Long Range" load which had coppered shot. (See No. 2 above.)

No. 5. Nitro Express, No. 6 chilled. Extreme spread at 20 yards, 18½, 20½ and 20½ inches. Dense centers ran, 15½, 15 and 16 inches. At 40 yards the 5th pattern was poorest and the 7th was best, with a difference of 40 pellets. The average was almost 2 hits per 3-inch square. The distribution was 15 in 8 inches, 53 in 15 inches and 128 in 26 inches.

No. 6. Auto Express (duPont Oval) No. 6 chilled in 2¾-inch cases. These were the first cartridges, of those tried, to suit the chamber-length, and we looked for closer patterns. Extreme spread at 20 yards, 18, 21 and 19½ inches. Dense centers were: 16, 15 and 15 inches. At 40 yards the best pattern came on the 5th shot and the poorest on the last shot although there was negligible leading. The difference was only 32 pellets. The average gave a bit over 2 hits per 3-inch square. Although this was an "Extra Heavy Load" for maximum velocity it ranked third in the average number of hits on our target, which contained 87

three-inch squares. The 30-inch circle commonly used at 40 yards holds 78.5 similar squares. With a mean total of 180 hits this load was bested only by the coppered shot (No. 2) with 213 hits and by the other Arrow Express load (No. 4) which had a mean of 191 hits. The other three loads of No. 6 shot had averages of 158 hits, 158 hits and 154 hits, respectively. This last load of No. 6 shot (No. 6) at 40 yards had 19 in the 8-inch circle, 64 in the 15-inch circle and 150 in the 26-inch circle.

No. 7. Auto Express (duPont Oval) No. 4 chilled in 2¾ cases. This bigger shot would, of course, give less dense patterns as an ounce contains only 136 pellets as against 223 pellets for an ounce of No. 6 chilled. The 20-yard shooting indicated full-choke results with dense centers measuring 15, 14 and 15½ inches. The extreme spread at 20 yards ran, 19, 18½ and 20 inches. At 40 yards our average gave just over one hit per 3-inch square, with a total of 89, mean. The 8-inch circle averaged 11 hits, the 15-inch, 31 hits, and the 26-inch, 74 hits. The poorest pattern came on the 5th shot and the best on the 6th shot, with a difference of 33 hits. Apparently this barrel has too much choke for it and will not handle No. 4 shot well enough to give better than 47 to 52% patterns, which is insufficient to give the minimum requirement (for game shooting) of 100 hits in the 30-inch circle at 40 yards. No. 4 shot is too big for the 16-gauge load of 1 or 1½ ounces. It is better to stop at the No. 6 size and wiser to use smaller shot in the smaller bores. Next month we will give results obtained with No. 7½ and No. 9 shot in this same series.

#### WESTERN .220 SWIFT LOAD

THE 48-grain S. P. Cartridge is loaded by the Western Cartridge Company to the same ballistics as the W.R.A. .220 Swift, or 4140 f.-s. The only difference we note is a Lubaloy coated point instead of the bare lead exposure of the Winchester bullet. We tried them side by side at 200 yards with pretty uniform returns from all precincts. The rifle was the standard M-54 with 6X Malcolm No. 1 scope. Barr fired 5 shots with each load, and the tally read as follows:

Cartridge	Group	Impact
W.R.A. 48-gr. S.P.....	5¼"	9" high
W.R.A. 46-gr. O.P.....	3½"	8½" high
Western 48-gr. S.P.....	4¾"	9¼" high

After the Lyman 5-A mount-screws were turned down I fired a 10-shot group with each Winchester load, both going 2 inches low and 2¼ inches left, to agree perfectly in impact at 200 yards. With the 48-grain load I had 9 shots in 4½ inches and all 10 shots in 5½ inches. With the 46-grain

open-point load I had 9 shots in only 2-5/16 inches, all of them in 4¾ inches. That was pretty good accuracy; in the Hornet class in fact.

So we decided to try the .220 Swift at 600 yards. Here we used the Western 48-grain load exclusively, same rifle and scope. Our 600-yard groups averaged a bit over a foot or about 2 minutes of angle, agreeing with our 200-yard results, by indicating 4-inch accuracy for that range, or better. The raise in elevation from 200 yards required to zero at 600 yards was 17 minutes. A good, pointed, 56-grain bullet should take 5 minutes less elevation.

#### MISCELLANEOUS ITEMS

**Badger Tripod.** Price \$4.50. This is an improved V-rest with three folding legs and of a low height for prone shooters. The leather couch and strap scope-holder will not mar the finish of any scope. It is nicely made and compact. In fact, when folded it will go inside a shooting mitt. It is made at Owen, Wisconsin, by Badger Shooters Supply.

**Hall Tripod.** Fielding Hall, 1322 Montana Street, Los Angeles, California, sent in some gang molds, an extension tripod and an excellent shooting mitt. The tripod folds to a length of 13 inches. The extension shaft increases the height from a foot to nearly a yard above the ground, adapting it for offhand rifle or pistol shooting. It has a good web-strap scope-fastener and a V-rest which tilts for elevation. The shaft is turned in its socket for azimuth. In extended position there is some excess wobble which could be largely eliminated by employing a deeper seat for the extension shaft in the three-leg base. It is satisfactory otherwise.

**Hall Shooting Mitt.** The best mitt we have tried in prone position, because the padding is in the right place. It is very thick on the back where the sling presses. There is a very good cuff with two snap fasteners for those who want it snug about the sleeve. There is only a thong-tie to separate the first two fingers, the end of the mitt being open. It is very easily slipped on when the cuff snaps are left unfastened. This one is of yellow-color leather which looks like horsehide. It is soft, pliable and properly designed for maximum comfort. In fact, it is the most comfortable mitt we have tried. Another similar sample of heavier tan-color leather was too stiff and not nearly as comfortable. This stiffer one is just another shooting mitt.

**Albree Keeper's Keeper.** The former model was a low-price soft rubber wedge with brasswire-rod loops. The new Albree is a high-price, fancy-looking Keeper's Keeper which appears to be made of black

bakelite trimmed with ¾-inch chromium (or Parkerized gun-metal) bows through which the sling straps pass. This wedge is much larger than the former model being 2 inches long and ½-inch thick. It has grooves which bite into the sling to hold it securely, and yet they do not injure the sling. These clean sharp-edge grooves are arranged to give not only a non-slip effect but a self-tightening effect as well. The metal bows for the sling straps and their side slots provide a firm grip for the thumb and finger which will be appreciated by the shooter once he has shoved the wedge into place solidly inside the regular leather sling keeper. It really holds and can be loosened in no other manner than deliberately.

The only bad feature is the above-dollar price of this neatest and swankiest of all sling keepers. This improved Keeper's Keeper will, of course, last indefinitely and all the attention it will ever require is an occasional brushing out of those reliable holding grooves to keep them clean and sharp. Any leather strap or shooting sling should be kept clean with saddle soap and then made and kept pliable by proper application of neatsfoot oil or Viscol. G. Norman Albree, 110 Milk Street, Boston, Mass., says these new improved Bakelite Keeper's Keepers will be packed in boxes individually and will cost \$1.50 each in chromium finish and \$1.35 in gun-metal finish. The beautiful contrast of chromium on black makes the former the better value because it is the more swanky.

**Dex Keeper.** Now if you do not care about swank you can, for 75 cents, get a hinged metal sling keeper which will hold without ever slipping when in locked position. Furthermore, it is very conveniently loosened or shoved into place along the sling strap by grasping the locking plate. This locking plate is folded flat against the sling and this Dex Keeper really holds until deliberately loosened by raising the locking plate. We recommend this excellent keeper unreservedly. It is sold by Decker Bros., Mason City, Iowa.

**A Palm Rest** for the 52 Winchester is furnished by the same firm. This has a pear-shape walnut ball, a threaded rod, adjustable for height, and an insert top designed to replace the magazine of the 52 Winchester. Some shooters prefer to rest their finger tips on the bottom of the stock and their left thumb on the trigger guard in the hip-rest or free-rifle standing position. Grasping the ball of a palm rest, however, adds some security, fancied or otherwise, in a cross wind and thus promotes steadiness. Marshall Mathis happened to drop in at an opportune time and we got him to try this Decker palm rest on our heavy-barrel 52 Winchester. At 50 yards on the N. R. A. target he managed to score 93 x 100 in a gusty wind. Because of that wind he did appreciably

better with the palm rest than he did without it.

**Sprague Swivels,** made by C. E. Sprague, 423 N. E. 71st Avenue, Portland, Oregon, are very neat and suitable for a trim sporting rifle. We have them on the Alpine stock fitted to Barr's M-1917 Sporter. The permanent bases are bushings let in flush with the wood of the stock. The samples were designed for ¾-inch slings. It took less than one-half hour to do a good job of fitting. The bows are very roomy, so to speak, being triangular in shape. They spin freely in their bushings. This free-swivel effect is obtained by the feature of the design which is a thin knurled collar on which the swivel turns after screwing it into the threaded, permanent base-bushing. The knurled collar is also the lock. When it is loosened the swivel may be quickly turned out of its flush seat leaving the lines of the stock unchanged.

**The Sellman Cleaning Rod,** made by John P. Sellman, Jr., Box 485, Washington, Indiana, is a one-piece solid rod, which is an excellent feature for small-bore rifles. It is of smooth steel which is technically correct providing a hard-surface, rigid, elastic or flexible steel is used. The sample was too soft to be ideal for this purpose. We understand this will be corrected by choice of better material even if the \$1.00 price must be increased. The handle is a small brass knob. The jag end is a 3/16-inch button on the 13/64-inch .22-caliber rod. The recess behind the cleaning knob requires the use of sub-size patches unless the reduced part is extended slightly.

**Stam Rubber Rest.** Richard Stam has made three improvements in his excellent soft rubber cheek rests. The most important one is the detachable feature, accomplished by a row of snap fasteners. Others include a steady or progressive improvement in shape and fit, and, finally, the improvement in attractiveness by means of a smooth brown leather cover, which looks better than the rougher red rubber and really blends well with the finish of the M-54 stock on which we tried it.

The stock of the standard 54 Winchester is greatly improved for steady holding by any of the Stam rests, and any scope-sighted rifle that has standard stocks will give improved accuracy when the comb is built up with the Stam cushion rest. As now made the Adjustable Stam Rest leaves little to be desired. The metal fastener buttons are backed with a leather stock protector. The former thickness under the trigger hand has been eliminated to improve the hold, and a similar indenture has been made over the comb point, which on some stocks and actions will help to clear the bolt when it is pulled back or withdrawn. These rests have been of great help to us in testing many rifles with high-

mounted scope sights and we are glad to thus publicly express our appreciation.

*The Bean Trap Shooting Coat*, in what I call blue-black corduroy Norfolk-style jacket with tan-color gabardine sleeves, is an attractive garment. It has two large side pockets under the ornamental straps and a two-shell breast pocket. The Norfolk straps are sewn to and across the flapless pockets to the bottom of the coat. Thus they tend to keep the pockets closed and to retain the contents when the wearer bends or stoops, while, at the same time, permitting ready and easy access to the pockets at all times. The solid back is plain, full and deep. It is of the same color and material as the front. This is a well-fitting and comfortable shooting coat suitable for spring and fall but altogether too warm for summer heat, although it is collarless.

On the right shoulder is a conservative pad covered with smooth black leather. This is thin enough to suit shotgun requirements but too wide to prevent wrinkling when the right arm is raised in mounting the gun. Thus, while it will serve for trap shooting with the gun butt deliberately placed, it is not right for Skeet or field use or other purposes which require a swift raise of the gun butt from beneath the elbow. For Skeet shooting this pad should be narrowed to the shoulder seam or split at that point to prevent wrinkling or bulging as the arm is raised.

*Craftene* is available at low cost through Craft Service, 542 Blossom Road, Rochester, New York. Phil Sharpe, who told us about it, has a pair of revolver stocks of this material, which he says look well despite the gaudiness. We obtained a few small samples in a variety of bright and conservative colors, suitable for stock inlays fore-end tips, grip caps, revolver stocks, etc. It can be had in ground glass effect and "crystal clear" as well as in solid colors. We would suggest it to John Stiles as potential material for his clever loading block and paster holder. It is readily fashioned to any shape by filing or grinding and can be polished like dense wood.

*Shootakraft products* by John Stiles of Stoughton, Mass., include a very attractive and useful loading block in a black, pebbled cowhide case closed with a Talon (Zipper) hookless fastener. It is a circular block which holds fifty .22 Long Rifle cartridges with ample finger room between them. It is about 4 inches wide by 1½ inches deep. It is made of a plastic semi-transparent material the sample being of "ground glass" type. Any quartz color will be available, though solid black will be standard.

The nicest feature of this very swanky cartridge block is the slots through which gummed tape protrudes. This ¾-inch target-paster material is just what we have

wanted for .22-caliber holes. It will also serve for .357-caliber holes, as made by the .38 Special, since the paper ribbon is .375-inch wide. The sample has only white tape, but future issues will be provided also with black-paster tape. This tape is in a roll which rests in the hollow formed by the separate bottom ring of the plastic block. The ring is listed at \$.25, the block at \$1.00, the case at \$1.25 and the tape refills at \$.25 for three. The assembly in standard black color is \$2.25, plus \$.25 for special colors. We understand clubs and N.R.A. members will be quoted discounts.

Other Shootakraft products now available are rubber stamps for targets and the 3-bull, Stiles Triskill Target for luck matches.

*IpcO Graphite Wads*. The first prepared graphite wads we received came in from the Industrial Products Co., 146 Summer Street, Boston, Mass. We used the two sample ribbons in reloading the .220 Swift and .22 Niedner and then obtained a box for continued use which held a 50-inch ribbon. Like the Donaldson-Sisk graphite wads, mentioned two months back, these IpcO graphite wads are pressed over the mouths of loaded cartridge cases prior to bullet seating. They serve to greatly reduce the rate of throat erosion and tend to practically eliminate bore erosion with apparently no serious effect on pressures or combustion. Of course the density of the load is increased and pressures and velocities must be increased when any solid, such as a graphite wad, is added to a load. Extreme loads in some chambers might, therefore, call for a slight reduction in the powder charge much the same as is required when the seating depth is increased. These IpcO wads are comparatively dry or firm and consequently more convenient to use.

#### PISTOL SHOOTERS' KIT

**J.** D. BUCHANAN, Los Angeles, California, is now advertising that previously reviewed, excellent, short-action job on S. & W. revolvers at \$10.00 and a complete accuracy-job on the Service pistol or National Match Colt for less than that. We are sold on the Outdoorsman he tuned up with a short-throw hammer and so have others become sold on it at first trial. Nicholson's Service pistol conditioned and tuned by Buchanan is still waiting trial.

At Tampa, Charley Askins, Jr., had a new Buchanan pistol kit which created considerable interest at the Midwinter Matches. We now have one of these Buchanan combination kits and his Four-Gun Pistol Shooters' Kit. We like the latter particularly well for transporting our handguns. It is a rectangular case

with a hinged lid and handle. It is plush lined and covered with attractive, brown, waterproof fabricoid at \$6.00. When covered with real leather it is priced only \$1.50 higher. This case holds four handguns in upright position, and so far it has accepted any pistol or revolver from our battery. Its dimensions are 7 x 8½ x 13¼ inches. Over the guns is a full-length tray, 2 inches deep, which will hold a small spotting scope or ammunition and small gadgets. For convenience in size and in arrangement and compactness we like this case.

The combination pistol kit is bigger, of course, as it serves also as a scope stand. In its clamp at the top of the opened lid we have our B. & L. prismatic scope, with the covers off and the sun shade pulled out, always ready for use. Closing the lid requires no adjustment of the scope because a special space is provided for it in this kit. We merely open the case, train it at the target horizontally and tilt the scope on the clamp-pivot for proper elevation. If desired the lid can be hooked in open position and the elevation adjustment can also be locked.


When open, a deep tray can be pulled out of the kit, exposing a notched plush-covered block which holds, in upright position, five handguns. In back, at the bottom, is a hinged door which opens on an ammunition compartment. This is a fine plush-lined case for the match shooter who has a shooting bench or shelf provided for him at the pistol range. For this condition we like the combination kit and scope stand. For our own use we prefer the Four-Gun kit. The bigger outfit is 9 x 11 x 14 inches and costs \$15.00 with fabricoid cover, or \$10.00 more leather covered.

#### RIFLE SHOOTERS' CASE

**H.** GERSTNER & SONS, Dayton, Ohio, manufacture excellent tool and instrument cases for mechanics. Acting on the suggestions received from many shooters they have tried to transform their tool case into a shooting kit. While the sample reveals an excellent job of adaption as well as of manufacture, their Rifle Shooters' Case falls short in some particulars. The price of \$18.00 and \$20.00 is too much for most riflemen. The bulk of nearly a foot in height by over a half-foot in thickness and nearly two feet in length for the smallest size is too great to create interest. Such a size should hold about everything, but we found more room in smaller kits. The only time we carried it to the range we had to leave out some of our equipment, including ammunition, scope stand and extra handguns.



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It is an excellent case for tools and small gadgets, but before we can become enthusiastic over it as shooters, it must be modified in size, price or arrangement. We have been assured that this is being done and that an improved shooters' case will be available shortly, perhaps by the time this review is printed. As is, the top tray left nothing to be desired for carrying any of our largest target scopes. By knocking out a partition it would also hold a small spotting scope and folded stand or saw buck. There is no other place for them in the case and we had to leave out our own.

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eral felt-lined drawers, well made with oak fronts and, indeed, very attractive. There is a very useful ammunition drawer provided with several small cartridge blocks for small-bore sizes. There is a pistol drawer which is useful, but only for one handgun. There is one deeper drawer which is useful for boxed ammunition or clips but limited to this in capacity. Besides these three are three more drawers too shallow to be generally useful except for the smallest and thinnest gadgets. The bottom one is of full length and may accommodate a few targets if folded, jointed rods or a couple of score books, but otherwise not useful. With two or three of the shallow drawers eliminated and the space applied to deepen those remaining a more useful shooting kit would be had. As is, it is very attractive in black waterproof leatherette covering. Drawers pull smoothly and all locks are excellently arranged. It is a high grade case.

#### REMINGTON MODEL 341

**T**HE M-341 is an improvement on the M-34 Remington repeater. It is a .22 rim fire bolt-action with a tubular magazine which handles all sizes. The capacity is 15 Long Rifles, 17 Longs and 22 Shorts. We tried it with the Long Rifle size for accuracy. The stock and sights are virtually the same as those on the single shot M-41 Remington Targetmaster reviewed in the April Dope Bag. This repeater is a bit heavier, as it weighs about 6 pounds. Unlike the M-34 the new stock has no finger grooves in the fore end and the wing safety of the M-341 intercepts the line of sight when it is on.

There is also a 341-P model which compares with the 41-P single shot and has peep rear and globe front sights with inter-

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changeable post and aperture. Sling, with hook swivels and screw eyes, is furnished on the Model 341-N.R.A. On all models the stock is 27½ inches long, of which 13½ inches is the butt-length to the trigger. The drop from the 50-yard line of sight is 1½ x 2¾ inches. The straight buttplate is 4½ inches long. The oil finished walnut stock was well shaped for good handling and steady holding. The 24-inch barrel gave us good accuracy with selected ammunition.

With peep and post sights at 50 yards we got only fair results when using Federal ammunition. For 90 shots, Lesmok Shorts averaged 4-inch, 10-shot groups. Excess-Speed Long Rifles, 3-inch groups and Lesmok Longs averaged 10 shots in 2½ inches.

With target-type ammunition the groups were smaller, of course. For 50 shots Precision averaged 1.55 and Palma Match, 1.43 inches. Kleanbore Kleankote had a ¾-inch group and another under an inch with an average of 1.06 inches for 50 shots. Super Match ran 10-shot groups of 15/16, 11/16, 11/16, 15/16 and 1/4 inches, the last group having 9 shots in one inch. The 50-shot average was 0.90 inch. That is remarkable accuracy for a low-price repeater.

Kleankote gave two Possible-size groups and Super Match had four out of five groups capable of scoring Possibles on the .89-inch, official 10-ring. The sling-equipped Model 341-N.R.A., intended for range use, can also be loaded as a single-shot for target practice, and thus it is adopted for target training under a coach. This repeater with post and peep sights proved to be more accurate than our sample single-shot, Model 41-P, with which at 50 yards our average was 1.70 inches for 30 shots with Precision and 1.46 inches with Palma Match. Kleankote shot into a bit over 1¾ inches and Super Match averaged exactly 1¾ inches in the single shot for 50 shots with each load.

#### Questions and Answers

Letters of shooting questions for this department should be mailed four to six weeks early, as circumstances often require a month's delay in reply. The facilities of the Technical Division have been improved, but the constant demands on its service have multiplied in all phases of the work of which answering Dope Bag letters is only a part. Impatient members are therefore asked to anticipate a month's delay by sending their questions five or six weeks early instead of writing follow-ups each week which merely serve to increase the load and to increase the necessary and reasonable delay of one month.

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## ALL R. A. PRIMERS ARE KLEANBORE N. M.

**R**EGARDING Mr. E. M. Kidder's "Warning" in the May Dope Bag concerning Remington No. 9½ primers, would like you to run a counter notice as soon as possible. I realize this is a late date, but if you can squeeze it in so much the better.

I have advertised and often stated that my loads are made with the No. 9½ primers as far as possible, as I believe this is absolutely the best primer for all high-power loads, particularly of the .220 Swift class.

I knew this was wrong as soon as I saw Mr. Kidder's "Warning," as I have used this primer for a long time, and know its characteristics. However, just to be on the official side of the argument, I wrote Mr. Witsil about it.

Quoting from his answer: "All of our commercial primers supplied as primers for reloading, are the nonmercuric, nonfouling type, and supply not only the No. 8½, but also the No. 9½ as nonmercuric and non-corrosive type."—J. Bushnell Smith.

## MARLIN P. G. STOCK AVAILABLE

**I**N THE May issue one "M.D." asked about having the 410 P. G. stock fitted to the Marlin 93 rifle. The Marlin people will do this at an additional cost of something like five bucks extra.

Two years ago I had the Marlin people fit this stock to a 93 rifle, a .25-36. This rifle has a 26-inch round barrel, half magazine, 17A front sight and Lyman 52 tang sight and sling, and I will say that there is not a gun in my collection that I like better for small game shooting. It is very accurate and balances fine.

If "M.D." got a rifle like this in the .30-30 caliber with a 24-inch barrel to be used in the woods he would have a very fine rifle and it would cost less than the Winchester Deer rifle. I do not like the Winchester top ejection. I like the Marlin side ejection much better. One cannot get a smoother and easier working action than the Marlin 93.—Arthur E. Anderson.

## ON SMALL BORE AMMUNITION

**D**URING this winter season, shooting a 52 Winchester with standard barrel over a 50-ft. gallery course, I have had numerous "fliers" both with Super Match and Kleanbore ammunition. I have noticed that the shell causing these "fliers" produces a much louder report than is normal. The peculiar thing to me about these is that these bullets nearly always strike low on the target, the hits being nines, with an occasional eight, at six o'clock. If the louder-than-normal report is caused by excess powder or primer, should not the bullet strike the target high because of the increased velocity? Others having these same "fliers" find them striking high.

But I made the following discovery. Since I load from a block by hand, I noticed that those shells which slid most easily into the

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chamber (i.e., those having the loosest fit) were most apt to be fliers. Then, by testing them for fit, I picked ten shells from a single box of Kleanbore, eight of which proved to be "fliers." But the grease coating on the bullet may explain the difference in fit.

Is there, then, any relation between the fit of a shell in the chamber and the accuracy of that shell? If so, why should the fliers which I get from my rifle strike low on the target? Or am I mistaken in my belief that excess powder or primer will cause a bullet to strike higher than normal?

The above refers, of course, to prone shooting. My average in that position for the winter, shooting three or more times each week, will be 99 or better, so I am fairly confident that holding is not responsible for all of the "fliers." Others shooting my rifle have experienced the same results.

All this may be elementary ballistics, but I shall appreciate anything you can tell me about the problem. I know that the cure is to change ammunition but I am curious as to the cause.—F. A. R.

**Answer:** It is possible that you have not properly fitted a load to your gun and you should do further experimenting with the Peters Rustless Filmkote loads and others. Maybe you will find that you get best results with Lesmok loads in that barrel, such as Winchester EZXS, Palma Match or Tack-hole. These, of course, are objectionable for gallery use, but individual rifles are finicky things, and some certain lot or load will be preferred.

Occasionally, you might get weak ignition in Kleanbore which would cause a low shot in a heavy barrel. Such a shot may go anywhere out of a light barrel. In shooting many thousands of shots of Kleanbore in different lots and in a great variety of rifles and pistols, this is the only criticism which will stick. The ammunition, otherwise, is very accurate and so uniform that many gunsmiths use it as their chambering gauge in making special match rifles in the .22 Long Rifle caliber.

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same as those having the weakest report and we get very good accuracy with them in most rifles, the exceptions being those which do best with Winchester EZXS, in which rifles Super Match becomes only ordinary good ammunition, usually.

Now where there is a difference in velocity, not indicated by loud report, however, the impact may be anywhere around the circle of the group and it will not necessarily go low for a low velocity shot or go high for a high velocity shot or vice versa, as there is no direct relationship. However, a heavy barrel usually maintains more uniform impact because it is less sensitive to velocity changes. Both ignition and chamber-fit are critical features for small-bore ammunition which affect velocity and accuracy.

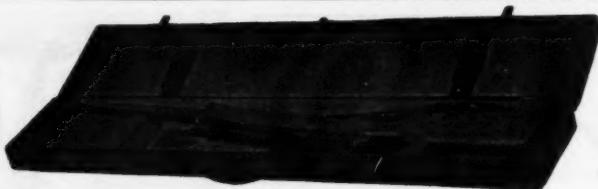
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pattern area would spread at least  $\frac{3}{4}$  inches per yard making about a 40-inch circle at 50 yards and a 45-inch circle at 60 yards. I believe you want to get beyond 60 yards or up to 65 yards where you have a 60-inch circle, by ratio, instead of the 30-inch circle at 40 yards. Your patterns will fall off about 40% between 40 yards and 60 yards, but if you have a 70% pattern in that 50-inch circle you will have only 154 hits to cover 283 3-inch square, which is only slightly better than 1 hit per 2 such squares or about 1 hit per 15 square inches with the  $1\frac{1}{2}$  oz. load of No. 4 shot. I am telling you this to indicate that you cannot expect any great increase in range with the  $1\frac{1}{2}$  oz. load because the pattern will not be dense enough and probably if you use finer shot your patterns will not be as good and at long range your power will not be as great, because the energy of the smaller pellets falls off much quicker.

## A Rifleman Went to War

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### ON INCREASING SHOTGUN RANGE

I HAVE an 11-lb. 10-gauge double, engraved "Pittsburgh Arms Co." on the rib, "Anson & Dealey" on the lock and Birmingham Proof House markings of the old type on its 30-inch choke-bored Damascus barrels.

Can I use the present day  $1\frac{1}{2}$  oz. load in

this arm? If not, what advantage would exist in using the  $1\frac{1}{4}$  oz. loading as compared to the same in a twelve gauge.

The arm is in excellent condition and the barrels are immaculate with the exception of one small pit and I would like to use it for long-range crow and duck shooting.

It is my hope to secure a killing range which is 8 to 10 yards over that of a 12-gauge. Will you please advise me?—J. T.

**Answer:** That old double-barrel 10-gauge is heavy enough for the  $1\frac{1}{2}$  oz. load, but I would hesitate to recommend it on account of the uncertain nature of those Damascus barrels, some of which have hidden flaws in the steel itself and sometimes a tiny pit is larger inside and extends nearly through to the surface. Therefore, while you probably would get away with shooting  $4\frac{1}{4}$  drams and  $1\frac{1}{2}$  oz. of No. 4 shot or larger shot, I would recommend that you stick to the  $1\frac{1}{4}$  oz. load which will give you a smaller and denser pattern than the 12 gauge. A 10 gauge, if it is not choked too much and if the velocity is not too high, should do 80% pattern in the 30-inch circle at 40 yards with such a load. By experiment you could find which size of shot would pattern best from 6's to 2's.

Using No. 4 shot as an example, 1 oz. would give you 108 pellets in a 30-inch circle or slightly over 1 hit per 3-inch square. The addition of  $\frac{1}{4}$  oz. would give you 136 hits or the equivalent of 100% pattern with the 1 oz. load in the 30-inch circle, or nearly 2 hits per 3-inch square. The further addition of  $\frac{3}{4}$  oz., up to the full load of  $1\frac{1}{2}$  oz., would give you 176 hits, which is not quite  $2\frac{1}{4}$  hits per 3-inch square or a very small gain. All the above are based on 80% patterns.

At the longer range you hope to achieve, the patterns would fall off and you could not expect 80% pattern and in addition your

### WANTS FARQUHARSON .280 DUBIEL

I HAVE a .257 Niedner Roberts 26-inch barrel weight  $13\frac{1}{2}$  lbs. which is fine up to 400 yards. Would like a .280 Dubiel for 1,000 yards on a Farquharson action with a 30-inch barrel  $1\frac{1}{4} \times 7\frac{1}{2}$  inch or  $1\frac{3}{8} \times 1\frac{1}{2}$  inch. Could I get as good accuracy as with a Magnum Mauser and is it as strong? I prefer a single action to get longer barrel, less muzzle blast and more speed. I believe the .280 will outshoot anything made so would appreciate any help you can give me in this matter.—N. B. S.

**Answer:** Griffin & Howe are working on the .280 Dubiel Magnum, but they do not seem to think much of the Farquharson action. However, I think the Farquharson action is all right for your purpose providing you get one with a double extractor for that long cartridge. I would suggest having the barrel very heavy for your purpose, especially at the breech and tapered to  $\frac{7}{8}$  inch at the muzzle if you have it 30 inches long. In such a rifle, I would also suggest tying the top and bottom tang together to hold a threaded socket for a butt-stock bolt passing through the stock lengthwise and tying your action and butt stock together firmly. Such a long bolt, of course, is introduced through a hole beneath the butt plate using a long and strong screw driver (by the gunsmith). This will add to the strength, rigidity and accuracy in this powerful caliber.

I believe some of the dissatisfaction with the expensive Farquharson action is owing to the failure to get double extractors for long cartridges and the usual practice of getting the actions in the white and then failing to harden and toughen them properly in the completed job. At the same time, I do not think any falling-block single-shot action is well adapted for a rimless case and I do not think any such single-shot action is well adapted for a long cartridge, like the .280.





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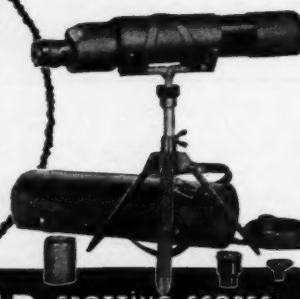
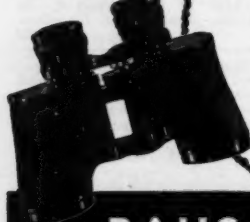
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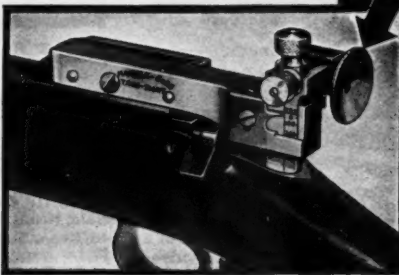
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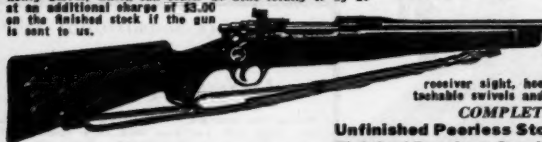
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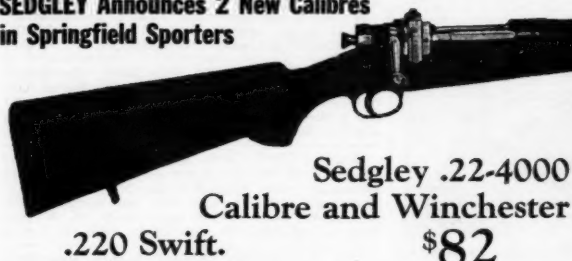
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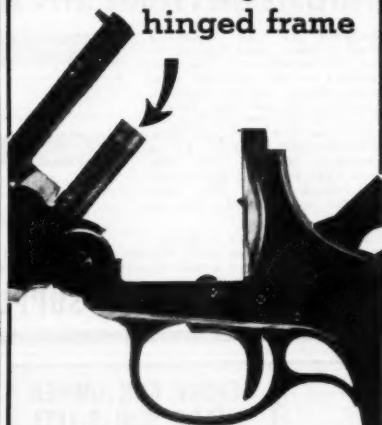
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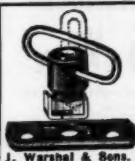
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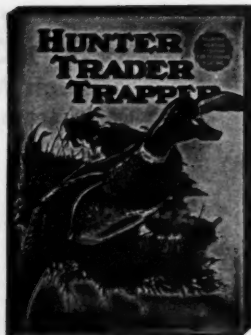
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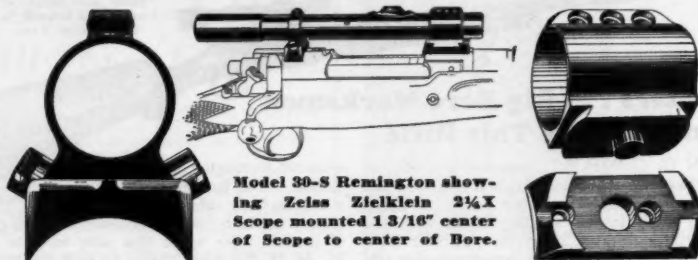
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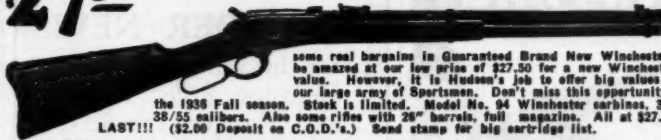
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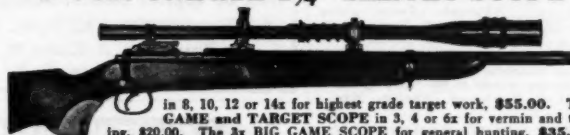
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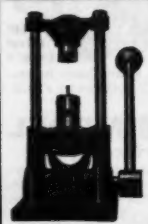
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**SPORTSMAN'S PARADISE!** Through Northern Minnesota wilderness by canoe. Beautiful scenery, virgin fishing, Walleyes, bass, trout. Satisfaction guaranteed. Reservations accepted. A vacation you'll never forget. Outfitted and guided by C. Roy Teller. Registered Canadian Guide—332-27 Eveleth, Minnesota. 6-36



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Do all in your power to bequeath the priceless heritage of abundant  
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# For "Hot" Scores On Hot Days!

## SUPER-MATCH



### No Caked Fouling In Your Gun When It's Over 100° In The Shade!

Sweltering high temperatures needn't prevent high scores! You can shoot SUPER-MATCH in a blistering hot gun barrel without getting the hard, *accuracy-destroying* fouling that is baked onto the bore when ordinary match ammunition is used!

Ordinary match cartridges leave a deposit of hard, caked fouling in the bore when Old Sol gets to working overtime, causing sufficient deformity of the bullets to affect their accuracy. SUPER-MATCH keeps your rifle *free of these deposits*. It is *always* at its best, regardless of the temperature!

The superiority of SUPER-MATCH as hot weather am-

munition is shown in the groups below. Each is a composite of five 10-shot, 100-yard groups, fired from a rifle barrel as hot as the hottest sun rays could make it. SUPER-MATCH GROUPED 20% BETTER than the other ammunition!

Western SUPER-MATCH is the hot weather, *all-weather*, all-year match winner of the small bore field! It will cut through 100 or 200 yards of wind to the X-ring without a quiver! It is SMOKELESS! CLEAN and comfortable indoors! . . . Mail the Coupon for full particulars.

WESTERN CARTRIDGE COMPANY  
Dept. F-25, East Alton, Illinois

SUPER-MATCH has a lead lubricated bullet. Non-corrosive primer insures cleanliness and reduces the burden of bore preservation.

Your local dealer probably stocks SUPER-MATCH, but if he doesn't, ask him to keep a supply on hand for your future needs.

# Western

WORLD'S CHAMPION AMMUNITION

UPPER TARGET—Composite of five 10-shot, 100-yard groups with SUPER-MATCH. Group average: 1.55 inches.  
LOWER TARGET—Composite of five 10-shot, 100 yard groups with ordinary match cartridges. Group average: 1.96 inches. All shots were fired from the same hot gun barrel, under identical conditions.



Western Cartridge Company,  
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Send full particulars of Western SUPER-MATCH — the all-year, smokeless .22 L. R. target cartridge.

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